



STANDARD BIDDING DOCUMENT

Supply and Delivery of High Density Polyethylene Pipes (PE-100) as per NS 40:2022

**National Competitive Bidding (NCB)
IFB No. WSSO/PALPA/NCB/G/082-83/01**

Water Supply and Sanitation Office Palpa

Issued on: 23rd July 2025

Issued to: Water Supply and Sanitation Office, Palpa

Invitation for Bids No.: WSSO/PALPA/NCB/G/082-83/01

Abbreviations

BDS.....	Bid Data Sheet
BD	Bidding Document
DCS.....	Delivery and Completion Schedule
DP	Development Partner
EQC	Evaluation and Qualification Criteria
GCC	General Conditions of Contract
GoN	Government of Nepal
ICC.....	International Chamber of Commerce
IFB	Invitation for Bids
ITB	Instructions to Bidders
LGRS	List of Goods and Related Services
NCB	National Competitive Bidding
PAN	Permanent Account Number
PPMO	Public Procurement Monitoring Office
SBD.....	Standard Bidding Document
SBQ.....	Schedule of Bidder Qualifications
SCC.....	Special Conditions of Contract
SR	Schedule of Requirements
TS.....	Technical Specifications
VAT	Value Added Tax

Table of Contents

Invitation for Bids

PART 1 – Bidding Procedures

Section I. Instructions to Bidders	6
Section II. Bid Data Sheet	28
Section III. Evaluation and Qualification Criteria	34
Section IV. Bidding Forms	38

PART 2 – Supply Requirements

Section V. Schedule of Requirements.....	52
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PART 3 – Conditions of Contract and Contract Forms

Section VI. General Conditions of Contract.....	58
Section VII. Special Conditions of Contract.....	75
Section VIII. Contract Forms	82



Lumbini Provincial Government
Ministry of Urban Development and Water Supply
Water Supply and Sanitation Office, Palpa
Invitation for Electronic Bids for the
Supply and Delivery of HDPE Pipe (PE-100) as per NS40:2022
IFB No.: WSSO/PALPA/NCB/G/082-83/01
Date of publication: **23rd July 2025**

1. **The Water Supply and Sanitation Office, Palpa** invites electronic bids from eligible bidders for the procurement of the **Supply and Delivery of HDPE Pipe (PE-100) as per NS 40:2022** under National Competitive bidding procedures specified in Public Procurement Act and Regulations. The name and identification of the contract are as follows:

Contract ID No.	Name of Procurement	Estimated Amount without VAT and Insurance NRs.	Bid Security NRs.	Document Fee NRs.
WSSO/PALPA/NCB/G/082-83/01	Supply and Delivery of HDPE Pipe (PE-100) as per NS 40:2022 for Different Water Supply Project	6994625.50	199000.00	3000.00

2. Eligible Bidders may obtain further information and inspect the bidding documents at the office of **Water Supply and Sanitation Office, Palpa, Tel.: 075-520007, Email: wssso.palpa@gmail.com** of office or may visit e-GP system: www.bolpatra.gov.np/egp.
3. Bidding documents is available online and can be downloaded from e-GP system: www.bolpatra.gov.np/egp. Interested bidders shall register in the e-GP system and deposit the cost of bidding document in the following bank.

Information to deposit the cost of bidding document in Bank:

Name of the Bank: Rastriya Banijya Bank, Palpa
Name of the Office: Water Supply and Sanitation Office, Tansen, Palpa
Office Account No.: 1000100200010000
Code No. : 3470250015
Revenue Head No. : 14229

4. Pre-bid meeting shall be held at **Water Supply and Sanitation Office, Tansen, Palpa** at 13:00 hours on **13th August 2025**.
5. Interested Bidders shall submit the electronic Bids through www.bolpatra.gov.np/egp to the **Water Supply and Sanitation Office, Palpa** on or before **12:00 hours on 22nd August 2025**. Bids received after this deadline will be rejected.
6. Bids shall be opened in presence of Bidders' representatives who choose to attend on **14:00 hour on 22nd August 2025** at the office of **Water Supply and Sanitation Office, Palpa**. Bids must be valid for a period of 90 days counting from the day of bid opening and must be accompanied by bid security (as mentioned above) which shall be valid for minimum 30 days beyond the bid validity period
7. If the last date of submission and opening falls on a government holiday then the next working day shall be considered the last day. In such a case the bid validity and bid security validity shall be recognized with effect from the original bid submission deadline.
8. If a Bidder is not Manufacturer himself must submit Manufacturer's Authorization Letter.

Section I. Instructions to Bidders

Table of Contents

A. General	6
1. Scope of Bid	6
2. Source of Funds	6
3. Fraud and Corruption	6
4. Eligible Bidders	9
5. Eligible Goods and Related Services	10
6. Site Visit	10
B. Contents of Bidding Document	11
7. Sections of the Bidding Document	11
8. Clarification of Bidding Document/Pre-bid meeting	12
9. Amendment of Bidding Document	12
C. Preparation of Bids	12
10. Cost of Bidding	12
11. Language of Bid	12
12. Documents Comprising the Bid	13
13. Bid Submission Letter and Price Schedules	13
14. Alternative Bids	13
15. Bid Prices and Discounts	13
16. Currencies of Bid	14
17. Documents Establishing the Eligibility of the Bidder	14
18. Documents Establishing the Conformity of the Goods and Related Services to the Bidding Document	14
19. Documents Establishing the Qualifications of the Bidder	15
20. Period of Validity of Bids	16
21. Bid Security	16
22. Format and Signing of Bid	17
D. Submission and Opening of Bids	18
23. Sealing and Marking of Bids	18
24. Deadline for Submission of Bids	18
25. Late Bids	18
26. Withdrawal, or Modification of Bids	18
27. Bid Opening	18
E. Evaluation and Comparison of Bids	19
28. Confidentiality	20
29. Clarification of Bids	20
30. Deviations, Reservations, and Omissions	21
31. Determination of Responsiveness	21
32. Non-material Non-conformities	22

33. Correction of Arithmetical Errors	22
34. Goods manufactured in Nepal to be produced	23
35. Evaluation and Comparison of Bids	23
36. Post-qualification of the Bidder	23
37. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids	23
F. Award of Contract	24
38. Award Criteria	24
39. Purchaser's Right to Vary Quantities at Time of Award	24
40. Notification of Intention to Award	24
41. Performance Security	24
42. Signing of Contract	25
43. Complaint and Review	25
44. Publication of contract award notice	26
45. Provision of PPA and PPR	27

Section I. Instructions to Bidders

A. General

1. Scope of Bid	<p>1.1 The Purchaser <i>indicated in the BDS</i> issues this Bidding Document for the supply of Goods and Related Services incidental thereto as specified in Section V, Schedule of Requirements. The name and identification of contracts are <i>indicated in BDS</i>.</p> <p>1.2 Throughout this Bidding Document :</p> <ul style="list-style-type: none"> (a) the term “in writing” means communicated in written form with proof of receipt; (b) if the context so requires, singular means plural and vice versa; and (c) “day” means calendar day.
2. Source of Funds	<p>2.1 GoN & Provincial Government Funded: In accordance with its annual program and budget, approved by the GoN/Provincial Government, the Purchaser intends to apply a portion of the allocated budget to eligible payments under the contract(s) <i>indicated in the BDS</i> for which this Bidding Document is issued.</p> <p>Or</p> <p>DP Funded: The GoN/Provincial Government has applied for or received financing (hereinafter called “funds”) from the Development Partner (hereinafter called “the DP”) <i>indicated in the BDS</i> toward the cost of the project <i>named in the BDS</i>. The GoN/Provincial Government intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.</p> <p>2.2 DP Funded: Payment by the DP will be made only at the request of the GoN/Provincial Government and upon approval by the DP in accordance with the terms and conditions of the financing agreement between the GoN/Provincial Government and the DP (hereinafter called the “Loan Agreement”), and will be subject in all respects to the terms and conditions of that Loan Agreement. No party other than the GoN/Provincial Government shall derive any rights from the Loan Agreement or have any claim to the funds.</p> <p>2.3 Public Entity's Resources Funded.</p>
3. Fraud and	<p>3.1 Procuring Entities as well as Bidders, suppliers and contractors and their</p>

<p>Corruption</p>	<p>sub-contractors shall adhere to the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this::</p> <p>(a) the Purchaser adopts, for the purposes of this provision, the terms as defined below:</p> <ul style="list-style-type: none"> (i) “corrupt practice” means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party; (ii) “fraudulent practice” means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation; (iii) “coercive practice” means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party; (iv) “collusive practice” means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party. (v) “obstructive practice” means (a) deliberately destroying, falsifying, altering, or concealing of evidence material to an investigation; (b) making false statements to investigators in order to materially impede an investigation; (c) failing to comply with requests to provide information, documents, or records in connection with an investigation; (d) threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or (e) materially impeding GoN/Provincial Government/DP’s contractual rights of audit or access to information; and (vi) “integrity violation” is any act which violates Anticorruption Policy, including (i) to (v) above and the following: abuse, conflict of interest, violations of GoN/Provincial Government/DP sanctions, retaliation against whistleblowers or witnesses, and other violations of Anticorruption Policy, including failure to adhere to the highest ethical standard. <p>(b) the Purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the contract;</p>
	<p>(c) DP will cancel the portion of the financing allocated to a contract if it determines at any time that representative(s) of the GoN/Provincial Government or of a beneficiary of DP-financing engaged in corrupt, fraudulent, collusive, or coercive practices or other integrity violations during the procurement or the execution of that contract,</p>

	<p>without the GoN/Provincial Government having taken timely and appropriate action satisfactory to DP to remedy the situation.</p> <p>(d) DP will impose remedial actions on a firm or an individual, at any time, in accordance with DP's Anticorruption Policy and related Guidelines (as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate in DP-financed, -administered, or -supported activities or to benefit from an DP-financed, -administered, or -supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations; and</p> <p>(e) The Supplier shall permit the GoN/Provincial Government/DP to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by the GoN/Provincial Government/DP, if so required by the GoN/Provincial Government/DP.</p>
	<p>3.2 The Bidder shall not carry out or cause to carry out the following acts with an intention to influence the implementation of the procurement process or the procurement agreement :</p> <p>(a) give or propose improper inducement directly or indirectly,</p> <p>(b) distortion or misrepresentation of facts,</p> <p>(c) engaging in corrupt or fraudulent practice or involving in such act,</p> <p>(d) interference in participation of other competing bidders,</p> <p>(e) coercion or threatening directly or indirectly to cause harm to the person or the property of any person to be involved in the procurement proceedings,</p> <p>(f) collusive practice among bidders before or after submission of bids for distribution of works among bidders or fixing artificial/uncompetitive bid price with an intention to deprive the Purchaser the benefit of open competitive bid price,</p> <p>(g) Contacting the Purchaser with an intention to influence the Purchaser with regards to the bids or interference of any kind in examination and evaluation of the bids during the period from the time of opening of the bids until the notification of award of contract.</p>
	<p>3.3 PPMO, on the recommendation of the Procuring Entity may blacklist a Bidder for a period of one (1) to three (3) years for its conduct including on the following grounds and seriousness of the act committed by the bidder:</p> <p>(a) if convicted by a court of law in a criminal offence which disqualifies the Bidder from participating in the contract,</p> <p>(b) if it is established that the contract agreement signed by the Bidder was based on false or misrepresentation of Bidder's qualification information,</p> <p>(c) if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive</p>

	<p>practices in competing for, or in executing, a GoN/Provincial Government/DP-financed contract.</p> <p>(d) if the Successful Bidder fails to sign the Contract.</p>
	<p>3.4 A bidder declared blacklisted and ineligible by the GoN/Provincial Government, Public Procurement Monitoring Office (PPMO) and/or the DP in case of DP funded project, may be ineligible to bid for a contract during the period of time determined by the GoN/Provincial Government, PPMO and/or the DP including credit information bureau of Nepal.</p> <p>3.5 In case of a natural person or firm/institution/company which is already declared blacklisted and ineligible by the GoN/Provincial Government, any other new or existing firm/institution/company owned partially or fully by such Natural person or Owner or Board of director of blacklisted firm/institution/company; shall not be eligible bidder.</p>
	3.6 Furthermore, Bidders shall be aware of the provisions of GCC 28.3.
	<p>4.8 A bidder and all parties constituting the Bidder shall have the nationality of an eligible country as defined by the concerned DP for DP funded projects.</p> <p>4.9 The domestic Bidder who has obtained Permanent Account Number (PAN) and Value Added Tax (VAT) registration certificate(s) and Tax clearance certificate or proof of submission of tax return from the Inland Revenue Office shall only be eligible. The foreign bidder submitting the documents <i>indicated in the BDS</i> at the time of bid submission and a declaration to submit the document(s) <i>indicated in the BDS</i> at the time of contract agreement shall only be eligible</p>
4. Eligible Goods and Related Services	<p>5.1 All goods and related services to be supplied under the contract are eligible, unless their origin is from a country <i>specified in the BDS</i>.</p> <p>5.2 For purposes of this clause, “origin” means the place where the goods are mined, grown, or produced, or the place from which the related services are supplied</p> <p>5.3 The origin of goods and services is distinct from the nationality of the Bidder.</p>
Eligible Bidders	<p>4.1 This Invitation for Bids is open to eligible Bidders from all countries, except for any <i>specified in the BDS</i>.</p> <p>4.2 A Bidder may be a natural person, private entity, government-owned entity (subject to ITB 4.4) or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture (JV). Maximum number of partners in JV shall be as specified in BDS. In the case of a JV: all parties to the JV shall be jointly and severally liable; and a JV shall nominate a representative who shall have the authority to conduct all businesses for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during</p>

	<p>contract execution.</p> <p>4.3 A Bidder shall not have a conflict of interest. Any Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if, including but not limited to:</p> <ul style="list-style-type: none"> have controlling shareholders in common; receive or have received any direct or indirect subsidy from any of them; have the same legal representative for purposes of this Bid; have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Purchaser regarding this bidding process; a Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which it is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more than one bid; or a Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods and services that are the subject of the bid. <p>4.4 A Bidder that is under a declaration of ineligibility by the GoN/Provincial Government/DP in accordance with ITB 3.4, at the date of the deadline for bid submission or thereafter, shall be disqualified.</p> <p>4.5 A GoN/Provincial Government-owned enterprise may also participate in the bid if it is legally and financially autonomous, it operates under commercial law, and it is not dependent agency of the Purchaser.</p> <p>4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.</p> <p>4.7 Firms shall be excluded in any of the cases, if</p> <p>by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations prohibits any import of goods or Contracting of works or services from that country or any payments to persons or entities in that country.</p> <p>DP Funded: as a matter of law or official regulation, GoN/Provincial Government prohibits commercial relations with that country, provided that the DP is satisfied that such exclusion does not preclude effective competition for the supply of goods or related services required;</p> <p>(c) DP Funded: a firm has been determined to be ineligible by the DP in relation to their guidelines or appropriate provisions on preventing and combating fraud and corruption in projects financed by them.</p>
5. Site Visit	<p>6.1 For goods contracts requiring installation/ commissioning/ networking or similar services at site, the Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the Site and obtain all information that may be necessary for preparing the Bid and entering</p>

	<p>into a contract for the supply of goods and related services.</p> <p>6.2 The Bidder should ensure that the Purchaser is informed of the visit in adequate time to allow it to make appropriate arrangements.</p> <p>6.3 The costs of visiting the Site shall be at the Bidder's own expense.</p>
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B. Contents of Bidding Document

<p>6. Sections of the Bidding Document</p>	<p>6.1 The Bidding Document consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read and construed in conjunction with any Addenda issued in accordance with ITB 9.</p> <p>PART 1 Bidding Procedures</p> <ul style="list-style-type: none"> • Section I. Instructions to Bidders (ITB) • Section II. Bid Data Sheet (BDS) • Section III. Evaluation and Qualification Criteria • Section IV. Bidding Forms <p>PART 2 Supply Requirements</p> <ul style="list-style-type: none"> • Section V. Schedule of Requirements <p>PART 3 Conditions of Contract and Contract Forms</p> <ul style="list-style-type: none"> • Section VI. General Conditions of Contract (GCC) • Section VII. Special Conditions of Contract (SCC) <p>Section VIII. Contract Forms</p> <p>7.2 The Purchaser will reject any Bid submission (in case of hard copy submission) if the Bidding Document was not purchased directly from the Purchaser, or through its assigned office as stated in the invitation for bids or has not deposited (in case of electronically submission) the cost of Bidding Document as stated in the invitation for bids.</p> <p>7.3 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document as well as in Amendments, if any. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the Bid.</p> <p>7.4 The Invitation for Bids issued by the Purchaser is not part of the Bidding Document</p>
<p>7. Clarification of Bidding</p>	<p>8.1 A prospective Bidder requiring any clarification of the Bidding Document</p>

Document/P re-bid meeting	<p>shall contact the Purchaser in writing at the Purchaser's address <i>indicated in the BDS</i>. The Purchaser will respond in writing to any request for clarification, provided that such request is received within the time limit <i>specified in the BDS</i> prior to the deadline for submission of Bids. The Purchaser shall forward copies of its response to all Bidders who have acquired the Bidding Document directly from it, including a description of the inquiry but without identifying its source. Should the Purchaser deem it necessary to amend the Bidding Document as a result of a clarification, it shall do so following the procedure under ITB 9 and 24.2.</p> <p>8.2 The purchaser may organize a pre-bid meeting of Bidders before the deadline for submission of Bids at the place, date and time as <i>specified in the BDS</i> to provide information relating to Bidding Documents, Technical specifications and the like matters. Should the purchaser deem it necessary to amend the Bidding Document as a result of a clarification, it shall do so following the procedure under ITB 9 and ITB 24.2.</p>
8. Amendment of Bidding Document	<p>9.1 At any time prior to the deadline for submission of the Bids, the Purchaser may amend the Bidding Document by issuing addenda.</p> <p>9.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document directly from the Purchaser. Such Addendum notice shall also be published in the National newspaper.</p> <p>9.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of the Bids, pursuant to ITB 24.2.</p>

C. Preparation of Bids

9. Cost of Bidding	<p>10.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.</p>
10. Language of Bid	<p>11.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the language <i>specified in the BDS</i>. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language <i>specified in the BDS</i>, in which case, for purposes of interpretation of the Bid, such translation shall govern.</p>
11. Documents Comprising	<p>12.1 The Bid shall comprise the following:</p>

<p>the Bid</p>	<ul style="list-style-type: none"> (a) Bid Submission Letter and the applicable Price Schedules, in accordance with ITB Clauses 13, 15, and 16; (b) Bid Security in accordance with ITB 21; (c) alternative bids, if permissible, in accordance with ITB 14; (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 22; (e) documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to bid; (f) documentary evidence in accordance with ITB Clauses 18 and 31, that the Goods and Related Services conform to the Bidding Document; (g) documentary evidence in accordance with ITB 19 establishing the Bidder's qualifications to perform the contract if its Bid is accepted; and (h) any other required documents, which is not against the provision of Procurement Act/Regulation/Directives and Standard Bidding Document issued by PPMO, <i>required in the BDS</i>. <p>12.2 The Bidder is solely responsible for the authenticity of the submitted documents.</p>
<p>12. Bid Submission Letter and Price Schedules</p>	<p>13.1 The Bidder shall submit the Bid Submission Letter using the form furnished in Section IV, Bidding Forms. This form must be completed without any alterations to its format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.</p> <p>13.2 The Bidder shall submit the Price Schedules for Goods and Related Services, according to their origin as appropriate, using the forms furnished in Section IV, Bidding Forms</p>
<p>13. Alternative Bids</p>	<p>14.1 Unless otherwise <i>indicated in the BDS</i>, alternative bids shall not be considered.</p>
<p>14. Bid Prices and Discounts</p>	<p>15.1 The Bidder shall complete the appropriate Price Schedule and the sources of Goods schedules included herein, stating the unit prices, total cost per item, the total Bid amount and the expected countries of origin of the Goods to be supplied under the contract.</p> <p>15.2 Prices quoted in the Price Schedules shall be included the cost of goods, other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the item, the customs duties, transportation cost up to final delivery, insurance cost,</p>

	<p>unloading, and any other cost for (incidental) services, if any, related to the delivery of goods. All risks and responsibilities up to the final destination including installation and commissioning of Goods, if applicable, shall be borne by the Supplier. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Items not listed in the Price Schedule shall be assumed not to be included in the Bid, and provided that the Bid is substantially responsive, the corresponding adjustment shall be applied in accordance with ITB 32.3</p> <p>15.3 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, unless otherwise <i>specified in the BDS</i>. A Bid submitted with an adjustable price quotation shall be treated as non responsive and shall be rejected, pursuant to ITB 31. However, if in <i>accordance with the BDS</i>, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a Bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.</p> <p>15.4 The Bidder's separation of price components in accordance with ITB 15.1 above will be solely for the purpose facilitating the comparison of bids by the Purchaser and will not in any way limit the Purchaser's right to contract on any of the terms offered.</p> <p>15.5 If the Bidder intends to offer any unconditional discount, it shall always be expressed in fixed percentage and that shall not vary as the quantity varies and be applicable to each unit rate. The methodology for its application shall be provided in bid submission letter.</p>
15. Currencies of Bid	16.1 All Prices shall be quoted in Nepalese Rupees.
16. Documents Establishing the Eligibility of the Bidder	<p>17.1 To establish their eligibility in accordance with ITB 4, Bidders shall:</p> <ul style="list-style-type: none"> (a) complete the eligibility declarations in the Bid Submission Letter, included in Section IV, Bidding Forms; and (b) if the Bidder is an existing or intended JV in accordance with ITB 4.2, submit a copy of the JV Agreement, or a letter of intent to enter into such an Agreement. The respective document shall be signed by all legally authorized signatories of all the parties to the existing or intended JV, as appropriate. (c) submit the copy of the documents as <i>specified in BDS</i>.
17. Documents Establishing	18.1 To establish the conformity of the Goods and Related Services to the Bidding Document, the Bidder shall furnish as part of its Bid the

<p>the Conformity of the Goods and Related Services to the Bidding Document</p>	<p>documentary evidence that the Goods and Related Services conform to the requirements specified in Section V, Supply Requirements.</p> <p>18.2 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item-by-item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to those requirements, and if applicable, a statement of deviations and exceptions to the provisions of Section V, Schedule of Requirements.</p> <p>18.3 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Section V, Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in Section V, Schedule of Requirements.</p>
<p>18. Documents Establishing the Qualificatio ns of the Bidder</p>	<p>19.1 The documentary evidence of the Bidder's qualifications to perform the contract, if its bid is accepted, shall establish to the Purchaser's satisfaction that the Bidder meets each of the qualification criterion specified in Section III, Evaluation and Qualification Criteria.</p> <p>19.2 If so <i>required in the BDS</i>, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in Nepal and take care of the warranty provided.</p> <p>19.3 If so <i>required in the BDS</i>, a Bidder that does not conduct business within Nepal shall submit evidence that it will be represented by an Agent in Nepal equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications.</p> <p>19.4 A foreign Bidder wishing to have or already having a local agent shall state the following:</p> <ol style="list-style-type: none"> Name and address of the Agent/Representative, The Agent/Representative providing type of services, Amount of commission if the Agent/Representative is entitled to get such payment and if it participates in the procedure of payment, Other agreement with Agent/Representative, if any,

	<p>e. Bidder shall certify in the Letter of Authorization as follows:</p> <p>"We certify that the statement and disclosure made by us on the above are complete and true to the best of our knowledge and belief",</p> <p>19.5 If a foreign Bidder in its Bid, has not provided the information mentioned in ITB 19.4 or has submitted its bid stating that the Bidder does not have a local agent and later it is proved that the bidder has a local agent or it is proved that the commission mentioned in the Bid is less than the commission received by the local agent then the Purchaser shall initiate proceedings to blacklist such bidder in accordance with ITB 3.3.</p>
19. Period of Validity of Bids	<p>20.1 Bid shall remain valid for a period <i>specified in the BDS</i> after the bid submission deadline date prescribed by the purchaser. A bid valid for a shorter period shall be rejected by the purchaser as nonresponsive.</p> <p>20.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 21, it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid and to include any additional conditions against the provisions specified in Bid Documents.</p>
20. Bid Security	<p>21.1 The Bidder shall furnish as part of its bid, in original form a Bid Security as <i>specified in the BDS</i>.</p> <p>21.2 If a bid security is specified pursuant to ITB 21.1, the bid security shall be a demand guarantee in any of the following forms at the Bidder's option:</p> <p>(a) original copy of an unconditional bank guarantee from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law or;</p> <p>(b) original copy of cash deposit voucher in the Purchaser's Account as <i>specified in BDS</i>.</p> <p>In case of a bank guarantee, the Bid Security shall be submitted using the Bid Security Form included in Section IV, Bidding Forms. The form must include the complete name of the Bidder. The Bid Security shall be valid for minimum thirty (30) days beyond the end of the validity period of the bid. This shall also apply if the period for bid validity is extended.</p>

The bid security issued by any foreign Bank outside Nepal must be counter guaranteed by an **Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.**

- 21.3 If a bid Security is required in accordance with ITB 21.1, any Bid not accompanied by an enforceable and compliant Bid Security in accordance with ITB 21.2, shall be rejected by the Purchaser as nonresponsive. In case of e- Submission, if the scanned copy of an acceptable bid security letter is not uploaded with the electronic bid then bid shall be rejected.
- 21.4 If a Bid Security is specified pursuant to ITB 21.1, the Bid Security of unsuccessful Bidders shall be returned within three (3) days upon the successful Bidder furnishing of the signed Contract Agreement and the Performance Security pursuant to ITB 42.
- 21.5 If a Bid Security is specified pursuant to ITB 21.1, the Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract Agreement and furnished the required Performance Security.
- 21.6 The Bid Security may be forfeited:
- (a) a Bidder requests for withdrawal or modification of its bid, except as provided in ITB 20.2
 - (i) during the period of bid validity specified by the Bidder on the Letter of Bid, in case of electronic submission;
 - (ii) from the period twenty-four hours prior to bid submission deadline up to the period of bid validity specified by the Bidder on the Letter of Bid, in case of hard copy submission.
 - (b) a Bidder changes the prices or substance of the bid while providing information pursuant to clause 29.1;
 - (c) a Bidder involves in fraud and corruption pursuant to clause 3.1;
 - (d) the successful Bidder fails to:
 - (i) furnish a performance security in accordance with ITB 41.1;
 - (ii) sign the Contract in accordance with ITB 42.1; or
 - (iii) accept the correction of arithmetical errors pursuant to clause 33.
- 21.7 The Bid Security of a JV must be in the name of the JV that submits the bid. If the JV has not been legally constituted at the time of bidding, the

	Bid Security shall be in the names of all future partners as named in the letter of intent mentioned in ITB 17.1 (b).
21. Format and Signing of Bid	<p>22.1 The Bidder shall prepare bid as described in ITB 12 and shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as <i>specified in the BDS</i> and shall be attached to the Bid.</p> <p>22.2 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.</p>

D. Submission and Opening of Bids

22. Sealing and Marking of Bids	<p>23.1 Unless otherwise specified in BDS, Bidders shall submit their bids by electronic or by mail/ by hand/ by courier. Bidders submitting bids electronically shall follow the electronic bid submission procedures <i>specified in the BDS</i>.</p> <p>23.2 Bidders submitting bids by mail or by hand or by courier shall enclose the original and each copy of the Bid, including alternative bids, if permitted in accordance with ITB 14, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL", "ALTERNATIVE" and "COPY." These envelopes containing the original and the copies shall then be enclosed in one single envelope. The rest of the procedure shall be in accordance with ITB 23.2.1 and 23.2.2.</p> <p>23.2.1 The inner and outer envelopes shall:</p> <ul style="list-style-type: none"> (a) bear the name and address of the Bidder; (b) be addressed to the Purchaser in accordance with ITB 23.1; and (c) bear a warning "NOT TO OPEN BEFORE THE TIME AND DATE FOR BID OPENING". <p>23.2.2 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the bid.</p>
23. Deadline for Submission of Bids	<p>24.1 Bids must be received by the Purchaser at the address and no later than the date and time <i>indicated in the BDS</i>. In case of e-submission, the standard time for e-submission is Nepal Standard Time as set out in the server. The e-procurement system will accept the e-submission of bid from the date of publishing of notice and will automatically not allow the e-submission of bid after the deadline for submission of bid.</p> <p>24.2 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Document in accordance</p>

	with ITB 9, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
24. Late Bids	25.1 The Purchaser shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 24. Any Bid received by the Purchaser after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.
25. Withdrawal, or Modification of Bids	<p>26.1 A bidder may withdraw, or modify its bid after it has been submitted either in hard copy or by e-Submission. Procedures for withdrawal or modification of submitted bids are as follows:</p> <p>(i) Bids submitted in hard Copy</p> <p>a) Bidders may withdraw or modify its bids by sending a written notice in a sealed envelope, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2 before 24 hours prior to the last deadline of submission of bid. The corresponding modification of the bid must accompany the respective written notice. All notices must be:</p> <p>(aa) prepared and submitted in accordance with ITB 20 and ITB 21, and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL", "MODIFICATION;" and</p> <p>(bb) received by the Purchaser 24 hours prior to the deadline prescribed for submission of bids, in accordance with ITB 24.</p> <p>ii) E-submitted bids.</p> <p>26.1 a) Bidder may submit modification or withdrawal prior to the deadline prescribed for submission of bids through e-GP system by using the forms and instructions provided by the system. Once a Bid is withdrawn, bidder shall not be able to submit another bid for the same bid.</p> <p>26.2 Bids requested to be withdrawn in accordance with ITB 26.1 (i) shall be returned unopened to the Bidders after the end of bid opening process.</p> <p>26.3 In case of bids submitted in hard copy no bid shall be withdrawn or modified in the interval between 24 hours prior time of the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.</p> <p>In case of e-submitted bids no bids shall be withdrawn or modified in the interval between deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the bid submission form or any extension thereof.</p> <p>26.4 Except in case of any modification or correction in bid document made by procuring entity, Bidder may submit request for withdrawal or modification only one time.</p>

	<p>26.5 In case of hard copy bid, no bid may be withdrawn if the bid has already been modified; except in case of any modification or correction in bid document by procuring entity.</p>
27. Bid Opening	<p>27.1 The Purchaser's bid opening committee shall conduct the bid opening in public in the presence of bidder or its representative who choose to attend at the address, date and time <i>specified in the BDS</i>. The opening committee shall download the e-submitted bid files. The e-procurement system allows the Purchaser to download the e-submitted bid files (report) only after bid opening date and time after login simultaneously by two members of the Bid opening committee.</p> <p>Electronically submitted bid shall be opened at first in the same time and date as <i>specified above</i>. Electronic Bids shall be opened one by one and read out. The e-submitted bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files shall be considered incomplete.</p> <p>27.2 Before opening the bids the opening committee shall separate the envelopes of the bids received after the deadline of bid submission, the envelopes containing an application given for WITHDRAWAL, MODIFICATION of bids and the envelopes of bids duly registered. The bids received after the deadline of submission shall be returned to the concerned bidder unopened. Then envelopes marked "WITHDRAWAL" shall be opened first, read out, and recorded, and the envelope containing the corresponding Bid shall not be opened, but returned to the Bidder. If the withdrawal notice is not accompanied by a copy of the valid authorization pursuant to ITB 22.2, the withdrawal shall not be permitted and the corresponding Bid will be opened. Envelopes marked "MODIFICATION" shall be opened, read out, and recorded with the corresponding Bid. No Bid shall be modified unless the corresponding Modification Notice contains a valid authorization to request the modification and is read out and recorded at bid opening. Only envelopes that are opened, read out, and recorded at bid opening shall be considered further.</p> <p>27.3 All other envelopes shall be opened one at a time, and the following read out and recorded: the name of the Bidder and whether there is a modification; the Bid Prices (per lot if applicable), any discounts and alternative offers; the presence of a Bid Security, if required; if there is discrepancy between figure and words, description of such discrepancy; whether the bid form is signed by the bidder or his agent; and any other details as the Purchaser may consider appropriate. Only discounts and alternative offers read out and recorded at bid opening shall be considered for evaluation. No Bid shall be rejected at bid opening except for late bids, in accordance with ITB 25.1.</p> <p>27.4 The opening committee shall prepare a record of the bid opening that</p>

	<p>shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, or modification; the Bid Price, per lot if applicable, any discounts and alternative offers if they were permitted; and the presence or absence of a Bid Security. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted bids in time, and posted on line when electronic bidding is permitted. The Bidders' representatives who are present shall also be requested to sign an attendance sheet.</p>
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E. Evaluation and Comparison of Bids

28. Confidentiality	<p>28.1 Information relating to the examination, evaluation, comparison, and post-qualification of Bids, and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until publication of the Contract award; thereafter, information will be disclosed in accordance with ITB 40.1.</p> <p>28.2 Any attempt by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and post-qualification of the Bids or Contract award decisions may result in the rejection of its Bid.</p> <p>28.3 Notwithstanding ITB 28.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.</p>
29. Clarification of Bids	<p>29.1 To assist in the examination, evaluation, comparison and post-qualification of the Bids, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder with regard to its Bid and that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing. No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the evaluation of the Bids, in accordance with ITB 33.</p>
30. Deviations, Reservations, and Omissions	<p>30.1 During the evaluation of bids, the following definitions apply:</p> <ul style="list-style-type: none"> (a) "Deviation" is a departure from the requirements specified in the Bidding Document; (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and (c) "Omission" is the failure to submit part or all of the information

	or documentation required in the Bidding Document.
31.Determination of Responsiveness	<p>31.1 The Purchaser's determination of the responsiveness of a Bid is to be based on the contents of the Bid itself, as defined in ITB 12.</p> <p>31.2 A substantially responsive bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,</p> <p>(d) if accepted, would:</p> <p>(i) affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in Section V, Schedule of Requirements; or</p> <p>(ii) limits in any substantial way, inconsistent with the Bidding Document, the Purchaser's rights or the Bidder's obligations under the proposed Contract; or</p> <p>(e) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.</p> <p>31.3 The Purchaser shall examine the technical aspects of the bid in particular, to confirm that all requirements of Section V, Schedule of Requirements have been met without any material deviation or reservation.</p> <p>31.4 In Case, a corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution /company or any partner of JV, such Natural Person or Board of Director of the firm/institution /company or any partner of JV such bidder's bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal.</p>
32.Non-material Non-conformities	<p>32.1 The Purchaser may regard a Bid as responsive even if it contains minor deviations that do not materially alter or depart from the characteristics, terms, conditions and other requirement set forth in the Bidding Document or if it contains errors or oversights that are capable of being corrected without affecting the substance of the Bid.</p> <p>32.2 Provided that a Bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify non-material non-conformities or omissions in the Bid related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.</p> <p>32.3 Provided that a Bid is substantially responsive, the Purchaser shall</p>

	<p>rectify non-material non-conformities or omissions. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of the missing or non-conforming item or component. The adjustment shall be made using the method indicated in Section III, Evaluation and Qualification Criteria.</p> <p>32.4 If small differences are found such as in technical specification, description, feature which does not make the bid to be rejected, then the cost, which is calculated to the extent possible due to such differences, shall be included while evaluating bid.</p> <p>32.5 If the value is found fifteen percent more than the quoted amount of the bidder on account of small differences pursuant to ITB 32.4, such bid shall be considered irresponsive in substance and shall not be considered for evaluation.</p>
33. Correction of Arithmetical Errors	<p>33.1 Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical errors on the following basis:</p> <ul style="list-style-type: none"> a) if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected; b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above. <p>33.2 If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be rejected and the bid security shall be forfeited.</p>
34. Goods manufactured in Nepal to be procured	<p>34.1 If the price of goods manufactured in Nepal, are higher up to fifteen percent than that of manufactured in foreign countries, the goods manufactured in Nepal shall be preferred in the evaluation of the Bids.</p> <p>34.2 for granting such preference pursuant to 34.1, the bidder must submit the country of origin issued by competent authority stating that the value added of the goods in Nepal is more than 30 percent.</p> <p>34.3 In case of granting preference, the bid shall be compared (for bid comparison only) by adding an amount equal to 15 percent of the bid price of the such Goods manufactured in Nepal to the bid price of</p>

	Goods manufacture outside Nepal and lowest evaluated bid shall be determined.
35.Evaluation and Comparison of Bids	<p>35.1 The Purchaser shall evaluate and compare each Bid that has been determined, up to this stage of the evaluation, to be substantially responsive.</p> <p>35.2 To evaluate a Bid, the Purchaser shall only use all the criteria and methodologies defined in this Clause and in Section III, Evaluation and Qualification Criteria. No other criteria or methodology shall be permitted.</p> <p>35.3 In Case, a corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution /company or any partner of JV, such Natural Person or Board of Director of the firm/institution /company or any partner of JV such bidder's bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal.</p>
36.Post-qualification of the Bidder	<p>36.1 The Purchaser shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive Bid is qualified to perform the Contract satisfactorily.</p> <p>36.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 19.</p> <p>36.3 An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the Bid, in which event the Purchaser shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder's capabilities to perform satisfactorily.</p>
37.Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids	<p>37.1 The Purchaser reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all Bids at any time prior to Contract award, without thereby incurring any liability to the Bidders.</p>

F.Award of Contract

38.Award Criteria	<p>38.1 The Purchaser shall select to award the Contract to the Bidder whose offer has been determined to be the lowest evaluated Bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.</p>
39.Purchaser's Right to Vary	<p>39.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services</p>

Quantities at Time of Award	originally specified in Section V, Schedule of Requirements, provided this does not exceed the percentages <i>indicated in the BDS</i> , and without any change in the unit prices or other terms and conditions of the Bid and the Bidding Document.
40.Notification of Intention to Award	<p>40.1 The Purchaser shall notify the concerned Bidder whose bid has been selected in accordance with ITB 38.1 within seven days of the selection of the bid, in writing that the Purchaser has intention to accept his/her bid and shall Inform via the Letter of Intention included in the Contract Forms and the information of name, address and amount of selected bidder shall be given to all other bidders who submitted the bid.</p> <p>40.2 If no bidder submits an application pursuant to ITB 43.1 within a period of seven days of providing the notice under ITB 40.1 the Purchaser shall accept the bid selected in accordance with ITB 38.1 prior to the expiry of bid validity period, and notification of award shall be communicated to the bidder to furnish the performance security and sign the contract within fifteen days.</p> <p>40.3 In Case, a corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution /company or any partner of JV, such Natural Person or Board of Director of the firm/institution /company or any partner of JV such bidder's bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal.</p>
41.Performance Security	<p>41.1 Within fifteen (15) days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the Performance Security in accordance with the GCC, using for that purpose the Performance Security Form included in Section VIII, Contract Forms, or another form acceptable to the Purchaser.</p> <p>i) If bid price of the bidder selected for acceptance is up to 15 (fifteen) percent less than the approved cost estimate, the performance security amount shall be 5 (five) percent of the bid price.</p> <p>ii) For the bid price of the bidder selected for acceptance is more than 15 (fifteen) percent below of the cost estimate, the performance security amount shall be determined as follows:</p> <p>Performance Security Amount = [(0.85 x Cost Estimate – Bid Price) x 0.5] + 5% of Bid Price.</p> <p>The Bid Price and Cost Estimate shall be exclusive of Value Added Tax.</p>
	41.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the

	<p>Bid Security and black listing. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.</p>
<p>42. Signing of Contract</p>	<p>42.1 The successful Bidder shall sign the contract in the form included in section VIII after the submission of performance security in accordance with ITB 41.</p> <p>42.2 At the same time, the Purchaser shall also notify all other Bidders of the results of the bidding, and shall publish in an English/Nepali language newspaper or well-known and freely accessible website the results identifying the bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at Bid Opening; (iii) name and evaluated prices of each Bid; (iv) name of bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the Price it offered, as well as the duration and summary scope of the Contract awarded.</p>
<p>43. Complaint and Review</p>	<p>43.1 If a Bidder dissatisfies with the Procurement proceedings or the decision made by the Purchaser in the intention to award the Contract, it may file an application to the Chief of the concerning Public Entity of the Purchaser within seven (7) days of having, receipt of such notice or decision making, for review of the proceedings stating the factual and legal grounds.</p> <p>43.2 An application filed after the deadline pursuant ITB 43.1 shall not be processed.</p> <p>43.3 The chief of Public Entity of the Purchaser shall, within five (5) days after receiving the application, give its decision with reasons, in writing pursuant to ITB 43.1:</p> <ul style="list-style-type: none"> (a) whether to suspend the procurement proceeding and the procedure for further proceedings to be adopted; or (b) whether or not to reject a application. <p>No application can be submitted before the Review Committee for review against the decision made by the chief of the Public Entity for the Bid amount up to the value <i>as stated in BDS</i>.</p> <p>43.4 If the Bidder is not satisfied with the decision of the Public Entity in accordance with ITB 43.3, or the decision by the Public Entity is not given within five (5) days of receipt of application pursuant to ITB 43.1, it can, within seven (7) days of receipt of such decision, file an application to the Review Committee of the GoN/Provincial Government, stating the reason of its disagreement on the decision of the chief of Public Entity and furnishing the relevant documents,</p>

	<p>provided that its Bid amount is above the amount as stated in ITB 43.3. The application may be sent by hand, or by post, or by courier, or by electronic media at the risk of the Bidder itself.</p> <p>43.5 Late application filed after the deadline pursuant to ITB 43.4 shall not be processed.</p> <p>43.6 Within three (3) days of the receipt of application from the Bidder, pursuant to ITB 43.4, the Review Committee shall notify the concerning Public Entity of the Purchaser to furnish its procurement proceedings and comments on the issue, pursuant to ITB 43.3.</p> <p>43.7 Within three (3) days of receipt of the notification pursuant to ITB 43.6, the Public Entity shall furnish the copy of the related documents along with its comment or reaction of complaint to the Review Committee.</p> <p>43.8 The Review Committee, after inquiring from the Bidder and the Public Entity, if needed, shall give its decision within one (1) month after receiving the application filed by the Bidder, pursuant to ITB 43.4.</p> <p>43.9 The Bidder, filing application pursuant to ITB 43.4, shall have to furnish a cash amount or Bank guarantee <i>as stated in BDS</i> with the validity period of at least ninety (90) days from the date of the filing of application pursuant to ITB 43.4. Application filed without furnishing the security deposit shall not be processed.</p> <p>43.10 If the claim made by the Bidder pursuant to ITB 43.4 is justified, the Review Committee shall have to return the security deposit to the applicant, pursuant to ITB 43.9, within seven (7) days of such decision made.</p> <p>43.11 If the claim made by the Bidder pursuant to ITB 43.4 is rejected by the Review Committee, the security deposit submitted by the Bidder pursuant to ITB 43.9 shall be forfeited.</p>
44. Publication of contract award notice	<p>44.1 Within three days of contract signing, the Public Entity shall publish a notice on the contract award with following information:in its notice board as well as shall manage to publish the notice on the notice board of District Coordination Committee, District Administration Office, Provincial Treasury and Controller Office and District Treasury and Controller Office. Such notice shall also be posted in its website and PPMO's website.</p> <ol style="list-style-type: none"> name of the procurement, IFB number, date and name of newspaper published the IFB notice, name of the successful Bidder, and the contract price.

	44.2 The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, within thirty days from the date of publication of contract award notice in accordance with ITB 44.1, requests in writing the grounds on which its bid was not selected.
45.Provision of PPA and PPR	45.1 If any provision of this document are inconsistent with Public Procurement Act (PPA), 2063 or Public Procurement Regulations (PPR), 2064, the provision of this documents shall be void to the extent of such inconsistency and the provision of PPA and PPR shall prevail.

Section II. Bid Data Sheet

A. Introduction	
ITB 1.1	Name of the Purchaser: Water Supply and Sanitation Office, Palpa
ITB 1.1	Name and Identification number of the Contracts: Supply and Delivery of High Density Polyethylene Pipes (PE-100) as per NS 40:2022 for Different Water Supply Project WSSO/PALPA/NCB/G/082-83/01
ITB 2.1	Source of Fund: GoN/Provincial Government Funded Name of the Project: Different Water Supply Projects. Name of the DP: Implementing Agency: Water Supply and Sanitation Office, Palpa.
ITB 4.1	Bidders from the following countries are not eligible: "Not Applicable"
ITB 4.9	The foreign Bidder at the time of bid submission: <ul style="list-style-type: none"> ▪ shall submit <ol style="list-style-type: none"> 1. Valid Registration Certificate 2. Local Agent Certificate ▪ shall declare to submit at the time of contract agreement PAN/VAT Registration Certificate
ITB 5.1	Goods and related services to be supplied from following countries are not eligible: "Not Applicable"
B. Bidding Document	
ITB 8.1	For clarification purposes only, the Purchaser's address is: Attention: Office Chief Name of the Purchaser: Water Supply and Sanitation Office City/Town: Tansen. District: Palpa Country: Nepal Telephone: 075-520007 Electronic Mail Address: wssopalpa@gmail.com
ITB 8.1	The purchaser will respond in writing to any request for clarification provided that such request is received no later than 10 days prior to the deadline date for submission of bid.

ITB 8.2	Not Applicable
C. Preparation of Bids	
ITB 11.1	The language of the Bid is: Nepali or English
ITB 12.1 (h)	The Bidder shall submit the following additional documents with its Bid: <ul style="list-style-type: none"> (i) Manufacture Authorization Letter (ii) Power of Attorney to sign the bid
ITB 14.1	Alternative Bids. <i>are not</i> permitted
ITB 15.3	The prices quoted by the Bidder shall : shall not be adjustable
ITB 17.1 (c)	The Bidders shall submit: <ul style="list-style-type: none"> ▪ Copy of Firm Registration Certificate ▪ Copy of Business Registration Certificate (if required) ▪ Copy of VAT and PAN Registration Certificate, ▪ Tax Clearance Certificate for the F/Y 2080/81 with 2081/082 extension
ITB 19.2	A Manufacturer's Authorization letter is required for the item listed in Section V Schedule of Requirements.
ITB 19.3	The Bidder " <i>is</i> " required to include with its bid, evidence that it will be represented by an Agent in Nepal.
ITB 20.1	The bid validity period shall be 90 days.
ITB 21.1	The bid must be accompanied by bid security, amounting to a <i>minimum of NRs 1,99,000/- (Only)</i> , which shall be <i>valid for minimum 30 days</i> beyond the bid validity period.
ITB 21.2	If the Bidder wishes to submit the Bid Security in the form of cash, the cash should be deposited in Deposit Account No.: 3030100202030000 Dharauti under the name of Office of the Treasury Controller, Palpa at Rastriya Banijya Bank, Tansen, Palpa and submit the receipt of the deposited amount of cash along with the bid
ITB 22.1	The written confirmation of Authorization to sign on behalf of the Bidder shall consist of: Power of Attorney to sign the bid
D. Submission and Opening of Bids	
ITB 23.1	Bidders shall have the option of submitting their bids : "by electronic only"
ITB 23.1	If the bidders shall have electronically option them insert a description of the electronic bidding submission procedure othrtwise delete the procedure. <ul style="list-style-type: none"> (a) If bidders submit their bids electronically, the electronic bidding

submission procedures shall be: Bidders submitting Bids electronically shall follow the electronic bid submission procedure specified in this clause.

- i. The bidder is required to register in the e-GP system <https://www.bolpatra.gov.np/egp> following the procedure specified in e-GP guideline.
- ii. Interested bidders may either purchase the bidding document from the Purchaser 's office as specified in the Invitation for Bid (IFB) or bidders may download the IFB and bidding document from e-GP system.
- iii. The registered bidders need to maintain their profile data required during preparation of bids.
- iv. In order to submit their bids the cost of the bidding document can be deposited as specified in IFB. In addition, electronic scanned copy (.pdf format) of the bank deposit voucher/cash receipt should also be submitted along with the technical bid.
- v. The bidder can prepare their bids using data and documents maintained in bidder's profile and forms/format provided in bidding document by Purchaser. The bidder may submit bids as a single entity or as a joint venture. The bidder submitting bid in joint venture shall have to upload joint venture agreement along with partner(s) Bolpatra ID provided during bidder's registration.
- vi. Bidders (all partners in case of JV) should update their profile data and documents required during preparation and submission of their technical bids.
- vii. In case of bid submission in JV, the consent of the partners shall be obtained through the confirmation link sent to the registered email address and the partners shall have to acknowledge their confirmation.

The required forms and documents shall be part of bids.

No.	Document	Requirement	Remarks
1.	Letter of Bid	Mandatory	PDF
2.	Bid Security	Mandatory	PDF
3.	Company registration	Mandatory	PDF
4.	VAT registration	Mandatory for domestic bidders	PDF
5.	Business Registration Certificate	if required, Mandatory	PDF
6.	Tax clearances certificate or evidence of tax return submission or extension of time	Mandatory for domestic bidders	PDF
7.	Power of Attorney of Bid signatory	Mandatory	PDF
8.	Bank Voucher for cost of bid document	Mandatory	PDF
9.	Joint venture agreement	Mandatory in case of JV Bid	PDF
10.	Completed Price Schedule	Mandatory	PDF or Web Forms
11.	Qualification Documents	Mandatory	PDF
12.	Technical specifications	Mandatory	PDF or Web Forms
13.	Delivery and Completion Schedule	Mandatory	PDF or Web Forms
14.	Additional Documents specified in ITB 12.1 (h)	If applicable	PDF

- viii. For verifying the authentic user, the system will send one time password (OTP) in the registered e-mail address of the bidder. System will validate the OTP and allow bidder to submit their bid.
- ix. Electronically submitted bids can be modified and/or withdrawn through system. The bidder may modify their bids multiple times online within bid submission date and time specified in e-GP system. Once a Bid is withdrawn, bidder won't be able to submit another bid response for the same bid.
- x. The Bidder / Bid shall meet the following requirements and conditions for e-submission of bids;
 - aa) The e-submitted bids must be readable through PDF reader.
 - bb) The facility for submission of bid electronically through e-submission is to promote transparency, non-discrimination, equality of access, and open competition in the bidding process. The Bidders are fully

	<p>responsible to use the e- submission facility properly in e-GP system as per specified procedures and in no case the Purchaser shall be held liable for Bidder's inability to use this facility.</p> <p>cc) When a bidder submits electronic bid through the PPMO e-GP portal, it is assumed that the bidder has prepared the bid by studying and examining the complete set of the Bidding documents including specifications, drawings and conditions of contract.</p>
ITB 24.1	For bid submission purposes only, the Purchaser's address is: Water Supply and Sanitation Tansen Palpa
ITB 24.1	<p>The deadline for bid submission is:</p> <p>Date: 22nd August 2025</p> <p>Time: 12:00 Noon</p>
ITB 24.1	If the last date of purchasing, submission and opening of Bid falls on a government holiday then the next working day shall be considered as the last day without any change in the time and place as fixed.
ITB 27.1	<p>The bid opening shall take place at:</p> <p>Date: 22nd August 2025</p> <p>Time: 14:00</p> <p>Place: Water Supply and Sanitation Office, Palpa</p>
ITB 27.1	<p>If electronic bid submission is permitted in accordance with ITB 23.1, the specific bid opening procedures shall be:</p> <p>The e-procurement system allows the Purchaser to download the e-submitted bid files (report) only after bid opening date and time after login simultaneously by two members of the Bid opening committee.</p>
E. Evaluation and Comparison of Bids	
F. Award of Contract	
ITB 39.1	<p>The maximum percentage by which quantities may be increased is: 0%</p> <p>The maximum percentage by which quantities may be decreased is: 0%</p>
ITB 43.3	No application can be submitted before the Review Committee for review against the decision made by the chief of the Public Entity for the bid amount less than the value of Twenty Million (NRs. 20,000,000)

ITB 43.9	The bidder,filling application pursuant to ITB 43.4,shall have to furnih a cash amount ot Bank guarantee equal to 1 % of its bid price
-----------------	--

Section III. Evaluation and Qualification Criteria

Evaluation Criteria

Bid shall be evaluated on the basis of PPA, PPR in which Technical Qualification (Pass/fail) and financial Qualification (Least Cost) Method shall be applied.

Eligibility Criteria

The bidders must submit the following documents:

- Copy of Firm Registration Certificate
- Copy of Business Registration Certificate
- Copy of VAT and PAN Registration Certificates,
- Copy of Tax Clearance Certificate for the F/Y 2080/81 with 2081/082 extension .
- Manufacturer's Authorization letter, if a bidder is not a manufacturer himself
- Proof of accreditation for Nepal Standard (NS) to the manufacturer

Qualification Criteria

N/A

Section IV. Bidding Forms

Table of Forms

Bid Submission Form	39
Bidder's Information Form.....	41
Joint Venture Information Form	42
Financial Situation Form	43
Average Annual Turnover Form	44
Financial Resources Form	45
Pending Litigation Form	46
Specific Experience Form	47
Price Schedule For Goods	48
Bid Security	49
Manufacturer's Authorization Letter	51

1. Bid Submission Form

(The Bidder shall accomplish the Bid Submission Form in its Letter Head Clearly showing the Bidders Complete name and address)

Date: _____

Contract No.: _____

Invitation for Bid No.: _____

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda No.: _____;
- (b) We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule specified in the Schedule of Requirements, the following Goods and Related Services: _____;
- (c) The total price of our Bid, excluding any discounts offered in item (d) below is: _____;
- (d) The discounts offered and the methodology for their application are: _____;
- (e) Our Bid shall be valid for a period of **[Insert 90 or 120]** days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (f) If our Bid is accepted, we commit to obtain a Performance Security in the amount as specified in ITB 41 for the due performance of the Contract;
- (g) We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Document;
- (h) The following commissions, gratuities, or fees, if any, have been paid or are to be paid with respect to the bidding process or execution of the Contract:

Name of Recipient

Address

Reason

Amount



(If none has been paid or is to be paid, indicate “none.”)

- (i) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed.
- (j) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (k) We declare that, we have not been black listed as per ITB 3.4 and no conflict of interest in the proposed procurement proceedings and we have not been punished for an offense relating to the concerned profession or business.
- (l) We agree to permit GoN/Provincial Government/DP or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by the GoN/Provincial Government/DP.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

2. Bidder's Information Form

[The Bidder shall fill in this Form. No alterations to its format shall be permitted and no substitutions shall be accepted. In case of joint venture, each partner shall fill the information in separate form.]

Date:[insert date (as day, month and year) of Bid Submission]

Page _____ of _____ pages

1.	Bidder's Legal Name	
2.	Bidder's Address:	
3.	Bidder's Country of Registration:	
4.	Bidder's Year of Registration:	
5.	Bidder's Legal Address in Country of Registration	
6.	Bidder's Authorized Representative Information: Name: Address: Telephone/Fax numbers: Email Address	
7.	Bidder's Telephone/Fax numbers:	
8.	Bidder's Email Address:	

3. Joint Venture Information Form

Lead Partner	Name of the Lead Partner in Joint Venture: Place of Firm Registration: Place of Business Registration: Percentage of Partnership:	
Partner	Name of the Partner in Joint Venture: Place of Firm Registration: Place of Business Registration: Percentage of Partnership:	
Partner	Name of the Partner in Joint Venture: Place of Firm Registration: Place of Business Registration: Percentage of Partnership:	
	Name of the partner authorized to sign the Bid:	

4. Financial Situation Form

Financial Data for Previous 3 Years (in NRs)		
Year 1:	Year 2:	Year 3:

Information from Balance Sheet

Total Assets			
Total Liabilities			
Net Worth			
Current Assets			
Current Liabilities			

Information from Income Statement

Total Revenues			
Profits Before Taxes			
Profits After Taxes			

☐ Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last three or above years, as indicated above, complying with the following conditions?

- Historic financial statements must be audited by a certified accountant.
- Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

5. Average Annual Turnover Form

The information supplied should be the Annual Turnover of the Bidder in terms of the amounts billed to clients for each year for work in progress or completed to NRs at the end of the period reported.

Annual Turnover Data for the Last Years	
Year	Amount (in NRs)
Average Annual Turnover	

6. Financial Resources Form

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, available to meet the total cash flow requirements of the subject contract

Financial Resources		
No.	Source of financing	Amount (in NRS)
1		
2		
3		

Note : The letter from the Bank must be in the prescribed format and stated details/terms and conditions as per the Bid Forms "Letter of Commitment for Bank's Undertaking for Line of Credit"

Special Note:

- 1) While setting the Qualification criteria of supplier, Public entity may specify the requirement of current assets of supplier as per the nature of goods to be supplied, **if needed.**
- 2) Public entity shall consider either **cash or overdraft or line of credit** facilities **as option** as per the nature of goods to be supplied, **if needed.**
- 3) In case, if line of credit is required for qualification purpose to demonstrate the current assets of supplier, supplier shall furnish the line of credit in attached format.

7. Pending Litigation Form			
Each Bidder or member of a JV must fill in this form			
Year	Matter in Dispute	Value of Pending Claim in NRs	Value of Pending Claim as a Percentage of Net Worth

8. Specific Experience Form

Bidder's Legal Name: _____

Date: _____

IFB No.: _____

Page _____ of _____ pages

Similar Contract	Information		
Contract Identification	_____		
Award date	_____		
Completion date	_____		
Total Contract amount	_____	Currency_____	
Description of the contract performed by the Bidder			
If partner in a JV or subcontractor, specify participation of total Contract amount	_____ %	_____	Currency_____
Purchaser's Name:	_____		
Purchaser's Address:	_____		
Purchaser's Telephone/fax number:	_____		
Purchaser's E-mail:	_____		

The Bidder shall complete this form for each contract completed/in progress.

Price Schedule For Goods

Name of Bidder _____ Invitation for Bid No.: _____

Item	Description	Country of Origin	Quantity	Unit price ¹ (in NRs)		Total price (in NRs) (cols. 4x5)
				In Figure	In Words	
1	2	3	4	5		4x5=6
Total						
VAT						
Grand Total						

[If there are more than one lot/slice/package, prepare Price Schedule form for each lot/slice/package]

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

¹ The price shall include the cost of goods, other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the item, the customs duties, transportation cost up to final delivery, insurance cost, unloading, and any other cost for (incidental) services, if any, related to the delivery of goods. All risks and responsibilities up to the final destination including installation and commissioning of Goods, if applicable, shall be borne by the Supplier.



Bid Security

[This is the format for the Bid Security to be issued on the letterhead by a Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law specified by Nepal

Rastra Bank]

[insert Bank's Name, and Address of Issuing Branch or Office]

Date: *[insert date]*

Beneficiary: *[insert Name and Address of Purchaser]*

BID GUARANTEE No.: *[insert number]*

We have been informed that *[insert name of the Bidder]* (hereinafter called "the Bidder") intends to submit its bid to you (hereinafter called "the Bid") for the execution of *[insert name of contract]* under Invitation for Bids No. *[insert IFB number]* ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we *[insert name of Bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount in figures][insert amount in words]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn or modifies its Bid:
 - i) during the period of bid validity specified by the Bidder on the Letter of Bid, in case of electronic submission
 - (ii) from the period twenty-four hours prior to bid submission deadline up to the period of bid validity specified by the Bidder on the Letter of Bid, in case of hard copy submission; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) changes the prices or substance of the bid while providing information pursuant to clause 29.1 of ITB; or
- (d) having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.
- (e) is involved in fraud and corruption in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder; or (ii) thirty (30) days after the expiration of the Bidder's bid which comes to be *[insert the date]*.



Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid Security for and on behalf of _____

Date _____



Letter of Commitment for Bank's Undertaking for Line of Credit

Bank's Name, and Address of Issuing Branch or Office

(On Letter head of the commercial bank or Financial Institution)

Invitation for Bids No:

Date:

Contract No:

Name of Contract :

To:

**[Name and address of the Procuring
Entity]**

CREDIT COMMITMENT No: [insert number]

We have been informed that [name of Bidder] (hereinafter called "the Bidder") intends to submit to you its Bid (hereinafter called "the Bid") for the execution of the Contract of **[description of Contract]** under the above Invitation for Bids (hereinafter called "the IFB").

Furthermore, we understand that, according to your conditions, the Bidder's Financial Capacity i.e. Liquid Asset must be substantiated by a Letter of Commitment of Bank's Undertaking for Line of Credit.

At the request of, and arrangement with, the Bidder, we [name and address of the Bank] do hereby agree and undertake that [name and address of the Bidder] will be provided by us with a revolving line of credit, in case awarded the Contract, for execution of the Contract viz. [insert name of the Contract], for an amount not less than NRs[in figure] (in words) for the sole purpose of the execution of the above Contract. This Revolving Line of Credit will be maintained by us until Completion of Contract by the Procuring Entity. In witness whereof, authorised representative of the Bank has hereunto signed and sealed this Letter of Commitment.

Signature

Signature

Note:- See **Special Note regarding Line of Credit** below the table of Financial Resources Form.



Manufacturer's Authorization Letter

[This letter of authorisation should be on the letterhead of the manufacturer and should be signed by the person with the proper authority to sign documents that are binding on the manufacturer]

■

■

Date: _____

IFB No.: _____

To: _____

WHEREAS _____ who are official manufacturers of _____ having factories at _____ do hereby authorize _____ exclusively to submit a Bid in relation to the Invitation for Bids indicated above, the purpose of which is exclusively to provide the following Goods, manufactured by us _____ and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 27 of the General Conditions of Contract, with respect to the Goods offered by the above firm in reply to this Invitation for Bids.

Name _____

In the capacity of: _____

Signed _____

Duly authorized to sign the Authorization for and on behalf of _____

Date _____

Section V. Schedule of Requirements

Contents

1. List of Goods and Related Services	53
2. Delivery and Completion Schedule	54
3. Technical Specifications	55
4. Drawings	56



Water Supply and Sanitation Office

Tansen, Palpa

Bill of Quantities

Name of Work :- Supply and Delivery of
HDPE Pipes

CONTRACT ID NO:-
WSSO/PALPA/NCB/G/082-83/01

Name of Project :- Different Water Supply Project
(Saghan Khanepani Bikas Aayojana)

Point of delivery :-
Wsso, Tansen, Palpa

Rs.
Earnest money:- **199000.00**
Rs.
Total Estimated cost
NRs (Excluding VAT):- **6994625.50**

S. N.	Item Description	Unit	Quantity	Unit price (in NRs)		Total price (in NRS)	Remarks
				In figure	In words		
A	Insurance	Ps	1	30430.00	Thirty thousands Four Hundred Thirty only	30430.00	
	Sub Total (A)					30430.00	
B	Supply of different HDPE (SDR) Pipes						
1	HDPE (PE-100) PN16, DN-20, SDR 9	m	37250				
2	HDPE (PE-100) PN16, DN-25, SDR 9	m	8300				
3	HDPE (PE-100) PN10, DN-32, SDR 13.6	m	8950				
4	HDPE (PE-100) PN16, DN-32, SDR 9	m	3700				

5	HDPE (PE-100) PN10, DN-40, SDR 13.6	m	9100				
6	HDPE (PE-100) PN16, DN-40, SDR 9	m	2460				
7	HDPE (PE-100) PN10, DN-50, SDR 13.6	m	11300				
8	HDPE (PE-100) PN16, DN-50, SDR 9	m	2530				
9	HDPE (PE-100) PN10, DN-63, SDR 13.6	m	1592				
10	HDPE (PE-100) PN16, DN-63, SDR 9	m	300				
11	HDPE (PE-100) PN10, DN-75, SDR 13.6	m	820				
12	HDPE (PE-100) PN16, DN-75, SDR 9	m	100				
13	HDPE (PE-100) PN10, DN-90, SDR 13.6	m	42				
	Sub Total (B)		86444				
	Value added tax @ 13%						
	Total with VAT (B)						
	Grand Total (A+B)						

Delivery and Completion Schedule

Delivery shall take place in compliance with the dates, duration, and locations indicated below:

(I) in case of Delivery schedule is not determined as evaluation criteria

Line Item No	Description of Goods	Quantity	Physical unit	Final Destination	Delivery Date
1.	2	3	4	5	6
1	Supply and Delivery of HDPE Pipe (PE-100) as per NS 40:2022	86444	Mtr.	Water Supply and Sanitation Office, Palpa	35 days from the date of Agreement.

[Provide information on Column 1 to Column 6]

[Prepare Delivery and Completion Schedule for each Lot/Slice/Package]

(II) in case of Delivery schedule is determined as evaluation criteria]

Line Item No	Description of Goods	Quantity	Physical unit	Final Destination as specified in BDS	Delivery Date		
					Earliest Delivery Date	Final Delivery Date	Bidder's offered Delivery date [to be provided by the bidder]
1.	2	3	4	5	6	7	8

[Provide information on Column 1 to Column 8]

[The delivery period shall start as of: "the date of signing the contract"]

[Prepare Delivery and Completion Schedule for each Lot/Slice/Package]

3. Technical Specifications

Technical Specifications FOR PE 100 HDPE PIPES

(According to NS 40:2022)

1.0 GENERAL

1.1 Definition

For the purpose of this specification, the following words and expression shall have the meanings hereby assigned to them, except where the context otherwise requires:

(a) "Purchaser" means the Water Supply and Sanitation Office (WSSO), Palpa

(b) "Manufacturer" means the firm or company who has been legitimately registered with the appropriate government agency to manufacture the pipes and includes his personal representative.

(c) "Supplier" means the persons, firm or company including manufacturer, whose tender has been accepted by the purchaser and has agreed to supply the pipes as per the specifications provided here under.

(d) "Contact" means the Condition of Contract, Specifications, Drawings, Priced Bill of Quantities, Tender and Agreement together with any Appendices and Addenda thereto.

1.2 Extent of Contract

The work under the Contract shall comprise the manufacture and delivery of pipes as specified in the Bills of Quantities/Bid document.

1.3 Deviation from Specifications

All pipes and fittings shall comply with Specification specified by NS 40:2022 fifth revision for PE 100 material except that, if the Supplier has offered pipes which while meeting the general requirements of the specification deviate there from in some point or points of detail and has at the time of submitting his Tender submitted full details of these deviations and Purchaser has accepted these deviations in writing, then the said Goods shall deviate from the Specification only to the extent so approved.

Where National Standards are cited in these documents with which the Goods must comply, Goods meeting other internationally accepted standards, which ensure a quality equal to or higher than the standards mentioned will also be accepted for which suppliers have to furnish relevant document such as test certificate regarding the quality of products on its own cost.

2.0 MATERIALS AND WORKMANSHIP

2.1 General Requirements

2.1.1 Materials

Term "materials" shall mean PE 100 material for manufacturing HDPE pipe specified by NS 40:2022 (fifth Revision) confirming density not lesser than 0.94gm/cm³ and articles of every kind whether raw, processed or manufactured which are used in manufacture of the Goods to be supplied under the Contract.

2.1.2 Composition

The pipes shall be extruded from **the PE 100 material and must meet all the requirement specified by NS 40:2022 fifth revision by NBSM, balaju**, or equivalent approved compound consisting of virgin polythene as described in NS 40:2022 fifth revision in which carbon black and a suitable non-toxic anti-oxidant are evenly dispersed.

The Client may ask to the suppliers to produce certificate of evidence of the original raw materials used for producing pipes and also the evidence of these materials imported or purchased.

All materials shall be new and of the kinds and qualities described in the clauses hereof appropriate to the particular item and shall be at least equal to approved samples except that alternative materials may be accepted provided the Supplier has at the time of tendering:

- a) Drawn particular attention to the deviation from the Specification in his tender and provided particulars of the alternative material offered at the time of tendering; and
- b) Substantiated to the satisfaction of the Purchaser that the material offered is equal or superior to the material specified for the use to which it in to be put and has obtained from the Purchaser approval in writing to its use.

Where materials to be used for any component have not been laid down in the Specification, the manufacturer shall use only those materials in such compositions as have been proven in actual service to be the most suitable for the particular purpose. All pipes shall be smooth, clean and free from all defects.

The supplier must name the manufacturer(s) at the time of tendering from whom he proposes to obtain any material under the contract. As a proof, he should also include a Letter of Consent from the manufacturer(s) stating his acceptance to sell the material to the supplier on award of the contract. Normally, the material supplied should be the product from the quoted manufacturer(s). However, in situation beyond the control of the supplier, the Purchaser may consent to accept material from other manufacturer; provided he is satisfied, that the new experienced and capable to produce the material and that the product is either equivalent or superior to the product from the previously agreed manufacture. No orders shall be placed with the newly named manufacturer without the written consent of the Purchaser.

2.1.3 Samples of Materials and Tests on Samples

The Supplier shall provide to the Purchaser certified copies of the results of any routine analyses or tests carried out by him or his manufacturer on materials used in the manufacture of the Goods when and if asked by the Purchaser.

In addition, when and if required by the Purchaser, the Supplier shall provide samples of all or any materials used in the manufacture of the Goods and shall carry out any specified test on the said materials as may be required by the Purchaser at the place of manufacture or at a laboratory approved by the Purchaser and shall provide to the Purchaser within seven days of each such test three certified copies of the results of the analysis or test.

Samples shall be submitted and tests carried out sufficiently early to enable further samples to be submitted and tested if required by the Purchaser. The Supplier or his manufacturer shall prepare the

necessary test pieces and supply all labor, appliances, testing apparatus and everything necessary for carrying out all specified tests.

The Supplier shall give the Purchaser 14 days notice in writing of the date on which any of the samples will be ready for testing or inspection and unless the Purchaser shall attend at the appointed place within the said 14 days, the test may proceed in his absence.

Approval by the Purchaser as to the placing of orders for materials or as to samples or tests shall not prejudice any of the Purchaser's rights under the Contract.

2.1.4 Test Certificates

Test certificates shall be provided by the Supplier for each consignment of pipe supplied, giving the process of manufacture and the results of the specified tests.

Similar certificates shall be provided by the Supplier in respect of materials to be used in the manufacture of the pipes giving the process of manufacture, chemical analysis (where relevant) and the results of the specified tests. The material shall be suitably marked to enable it to be identified from references on the certificates.

Any materials subject to test incorporated in the manufacture of the pipes before the Purchaser has received a satisfactory Test Certificate shall be at the Supplier's risk.

2.1.5 Independent Tests

The purchaser or his designated agent reserves the right to inspect and carry out any independent tests he may deem fit on the completed pipes or on any material to be used in the Contract at any stage of manufacturing in the plant or delivery, in addition to those tests specified to be made by the manufacturer.

Any samples of materials, which may be required for such tests, shall be provided by the Supplier at no extra cost to the Purchaser.

The cost of making any such independent tests shall be borne by the Purchaser, unless it is shown that the workmanship or materials under test are not in accordance with the Specification, in which case the cost of the tests shall be borne by the Supplier.

Any materials, workmanship or completed pipes, which are shown by such independent tests not to be in accordance with the Specification, shall be rejected, notwithstanding any previous certificate which may have been provided.

2.1.6 Rejected Goods

Any Goods delivered to the Site which have been rejected by the Purchaser shall immediately be removed from the Site by, and at the expense of, the Supplier. Replacement or rejected Goods shall be made as soon as possible but in no case **exceeding sixty (60) days** from the time of rejection.

Any pipes, which have been rejected, shall be marked in a distinctive manner, which shall preclude any possibility of their use for the purpose for which they were supplied. Such pipes may be submitted for retest following the correction of any defects, where such correction is permitted by the Purchaser.

2.1.7 Standards

All materials, workmanship and components shall, where applicable and unless otherwise stated in the Contract, comply with either:

- (a) As relevant Nepal, Indian, current on the date fixed for receipt of tenders, or
- (b) Any other internationally accepted equivalent standards which, in the opinion of the Purchaser, are equal to or better than the specified standards.

Nepal Standard NS: 40 – 2022 fifth revision published by Nepal Bureau of Standards and Metrology:

Indian Standards IS: 4984 - 1995 published by Bureau of Indian Standards, Manak Bhawan, New Delhi, India;

The acceptance of a tender based upon a Standard or Code of Practice proposed by the Supplier shall only signify the Purchaser's general approval to the use of such Standard or Code of Practice and shall not signify acceptance by the Purchaser of any materials or workmanship subsequently found to be inferior to that specified in the corresponding Standard or Code of Practice.

2.1.8 Supply and Marking of Pipes

The Pipes shall be supplied as coils with a minimum inner diameter of 18 times the OD of the pipes for OD sizes of 16mm to 63 mm as given below and for higher OD sizes in lengths of five meters. The pipes may also be supplied in other lengths between 5 to 20m where so agreed between the Supplier and the Purchaser. The ends shall be cut at right angles to the pipe axis and shall be plugged or covered. Each straight length/coil of pipe shall be clearly and indelibly marked in white/yellow color using ink/paint or inkjet print or hot embossed on white base at every 1m throughout the length of pipe/coil with the marking on the pipe shall carry the following minimum information:

- Manufacturer's name/trade-mark
- Material designation, PE100
- Pressure rating
- Standard dimension ratio (SDR).
- Nominal size and
- Lot Number/Batch Number, containing information of date of manufacture shall include the details of production in the following manner.

Year	Month	Day	Machine No.	Shift
Xxxx	Xx	Xx	Xx	Xx

Each pipe/coil should be marked with standard mark of NS certification marking.

2.2. Testing of Pipes before Delivery

2.2.1 Tests

At the place of manufacture; hydraulic tests, reversion tests and internal pressure creep tests of pipe and joints shall be carried out on ten random samples from each pipe series and diameter spaced throughout the manufacturing period.

The requirement may be reduced where a small length of a particular pipe diameter and series is to be supplied.

The working pressures for the various pipe series shall be:

PN 2.5 = 2.5 kgf/cm ² ,	PN 4 = 4 kgf/cm ² ,
PN6 = 6 kgf/cm ² ,	PN 10 = 10 kgf/cm ²



PN12.5 = 12.5 kgf/cm²,
PN 20 = 20kgf/cm²

PN 16 = 16kgf/cm²

Tests shall be witnessed by an independent inspection agent/ or purchaser's agent, to be appointed by the Purchaser, who shall approve the tests on behalf of the Purchaser.

2.2.2 Site Inspection and Testing

All Goods will be inspected after delivery to site and the Purchaser will reject any item which is damaged or not complying with the specifications.



नेपाल गणस्तर
NEPAL STANDARD

■ Polyethylene Pipes for Water Supply - Specification



Government of Nepal
Ministry of Industry, Commerce and Supplies
Nepal Bureau of Standards and Metrology (NBSM)
Kathmandu,
Nepal

www.nbsm.gov.p

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Table of Contents

Table of Contents	II
Foreword	III
1. SCOPE	1
2. REFERENCES	1
3. TERMINOLOGY	2
4. GRADE OF RESIN.....	4
5. MATERIAL.....	4
6. PIPE DESCRIPTION	6
7. GEOMETRIC CHARACTERISTICS OF PIPE	7
8. PERFORMANCE REQUIREMENTS	9
9. SAMPLING, FREQUENCY OF TESTS AND CRITERIA FOR CONFORMITY	12
10. MARKING.....	15
ANNEX A	16
ANNEX B.....	17
ANNEX C	18
ANNEX D	20
ANNEX E.....	22
ANNEX F	23
ANNEX G	24
ANNEX H	27
ANNEX J	33

Foreword

NBSM (Nepal Bureau of Standards and Metrology) is the National Standard Body involved in the development of standards in the country. The standard development process involves committee consisting of multi-stakeholders both from public and private sectors.

This standard is developed by technical committee having multi-stakeholder participation and approved by Nepal Standard Council as per Nepal Standard (Certification) Act, 1980.

This standard is based on ISO 4427 -1:2007 'Plastic piping systems – Polyethylene (PE) pipes and fittings for water supply – Part1: General', ISO 4427 -2:2007 'Plastic piping systems – Polyethylene (PE) pipes and fittings for water supply – part 2 : Pipes' and IS 4984 :2016 – Polyethylene Pipes for Water Supply – Specification' with some deviations.

This standard replaces NS 40: 2042 (fourth revision) and includes new raw material, pipe sizes range expansion, added performance requirements and some test methods. The standard will benefit both the users and the producers to have product of appropriate design and dimension; and will provide assurance of quality of the products as well.

The standard covers materials, design and dimension, tests, and sampling requirements. This standard contributes towards fulfilment of SDG goals.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. NBSM shall not be held responsible for identifying any or all such patent rights. Any tradename used in this document is information given for the convenience of users and does not constitute an endorsement.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.nbsm.gov.np.

■ Nepal Standard

Polyethylene Pipes for Water Supply – Specification

1. SCOPE

- 1.1 This standard lays down the requirements for polyethylene (PE) pipes (mains and service pipes) intended for the conveyance of water for human consumption including raw water prior to treatment and also water for general purpose.
- 1.2 This standard is applicable for the water supplies with a maximum operating pressure of 2.0 MPa.
- 1.3 An operating temperature of 27°C has been taken as the reference temperature.
- 1.4 The reference temperature of 20°C for 50 years of continuous stress is considered for the minimum required strength (MRS) of polyethylene base resin. To enable an operating water temperature of 27°C, the design stress has been accordingly corrected (see Table 1 and corresponding Notes). The standard also provides pressure reduction coefficients for water temperatures higher than 20°C and other than 27°C so as to calculate the maximum allowable operating pressure at those temperatures.
- 1.5 This standard does not purport to give guidelines for designing and dimensioning of pipelines.

2. REFERENCES

- 2.1 The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication the editions indicated are valid. All standards are subject to revision and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below :

NS... , Determination of water – Karl Fischer method (General method)

NS 97, Methods of test for polyethylene moulding materials and polyethylene compounds (melt flowrate)

NS 145, Methods of random sampling

NS 110, High Density polyethylene materials for moulding and extrusion — specification (first revision)



NS..., Method of analysis for the determination of specific and/or overall migration of constituents of plastics materials and articles intended to come in contact with foodstuffs

NS...., Positive list of constituents of polyethylene in contact with foodstuffs, pharmaceuticals and drinking water

NS...., Polyethylene for its safe use in contact with foodstuff, pharmaceuticals and drinking water)

3. TERMINOLOGY

For the purpose of this standard, the following definitions shall apply:

- 3.1 Nominal Size (DN)** — Numerical designation of the size of a component, other than a component designated by a thread size, which is a convenient round number approximately equal to the manufacturing dimension in millimetres (mm).
- 3.2 Nominal Size (DN/OD)** — Nominal size, related to the outside diameter.
- 3.3 Nominal Outside Diameter (d_n)** — Specified outside diameter, in millimetres, assigned to a nominal size DN/OD.
- 3.4 Outside Diameter at any Point (d_e)** — Value of the measurement of the outside diameter through its cross-section at any point of the pipe rounded to the next greater 0.1 mm.
- 3.5 Mean Outside Diameter (d_{em})** — Value of the measurement of the outer circumference of the pipe or spigot end of a fitting in any cross-section divided by π ($= 3.142$), rounded to the next greater 0.1 mm.
- 3.6 Minimum Mean Outside Diameter ($d_{em, Min}$)** — Minimum value of the outside diameter as specified for a given nominal size.
- 3.7 Maximum Mean Outside Diameter ($d_{em, Max}$)** — Maximum value of the outside diameter as specified for a given nominal size.
- 3.8 Out-of-roundness (Ovality)** — Ovality shall be measured as the difference between maximum outside diameter and minimum outside diameter measured at the same cross-section of the pipe, at 300 mm away from the cut end, for the pipe to be coiled.
- 3.9 Nominal Wall Thickness (e_n)** — Numerical designation of the wall thickness of a pipe, which is a convenient round number approximately equal to the manufacturing dimension in millimetres.
- 3.10 Standard Dimension Ratio (SDR)** — The SDR value is the ratio of the nominal outside diameter, d_n , of a pipe to its nominal wall thickness.

$$SDR = \frac{d_n}{e_n}$$

- 3.11 Wall Thickness at any Point (e)** — Wall thickness at any point of the body of the pipe, around its circumference
- 3.11.1 Minimum Wall Thickness at any Point (e_{Min})** — Minimum value of the wall thickness at any point of the body of the pipe, around its circumference as specified.

3.11.2 Maximum Wall Thickness at any Point (e_{Max}) — Maximum value of the wall thickness at any point of the body of the pipe, around its circumference as specified.

- 3.12 Mean Wall Thickness (e_m)** — The arithmetic mean of a number of measurements regularly spaced around the circumference of the pipe in the same cross-section of the pipe, including the measured minimum and the measured maximum values of the wall thickness.
- 3.13 Tolerance** — Permissible variation of the specified value of a quantity expressed as the difference between the permissible maximum and permissible minimum values.
- 3.14 Minimum Required Strength (MRS)** — Minimum value in megapascals (MPa), for long-term hydrostatic strength (LTHS) of the polyethylene resin which represents the 97.5 percent confidence limits of the predicted hydrostatic strength at 20°C for 50 years. This is considered as the property of the material.
- 3.15 Overall Service (Design) Coefficient (C)** — An overall design co-efficient with a value greater than 1, which takes into consideration service conditions as well as properties of the components of a piping system other than those represented in the lower confidence limit. For water supply pipes, the minimum value of C is 1.25.
- 3.16 Design Stress (s)** — The maximum allowable stress, expressed in megapascals (MPa), for a given application derived by dividing MRS by the co-efficient C. This is the allowable stress at 20°C.
- 3.17 Nominal Pressure (PN)** — Numerical designation used for reference purposes related to the mechanical characteristics of the component of piping system.

NOTE — For plastic piping systems conveying water, it corresponds to the maximum continuous operating pressure, expressed in bar which can be sustained with water at 27°C, based on the minimum design coefficient, C (1 MPa = 10 bar).

The relationship between MRS, PN and SDR is given in Annex A.

- 3.18 Maximum Allowable Operating Pressure (MAOP)** — The maximum allowable continuous pressure, expressed in MPa. It is given by the equations,

$$P \text{ (MPa)} = \frac{2 \times \sigma}{[(SDR-1)]} \times$$

$$P \text{ (MPa)} = \frac{2 \times MRS}{C [(SDR-1)]} \times$$

Where

SDR = standard dimension

ratio; σ = design stress, in

MPa;

MRS = minimum required strength, in

MPa; f_T = pressure reduction co-efficient;

and

C= overall service design co-efficient.

3.19 Pressure Reduction Co-efficient (f_T) — A co-efficient which takes into account the reduction in maximum allowable operating pressure due to increase in operating temperature.

3.20 Melt Flow Rate (MFR) — Value relating to the viscosity of the molten thermoplastic material at a specified temperature and rate of shear.

3.21 Virgin Material — Thermoplastics material in a form such as granules which has not been previously processed other than for compounding and to which no reprocessed or recycled materials have been added.

4. GRADE OF RESIN

Pipes shall be classified according to the grade of the raw material (resin) as given in Table 1. The resin supplier shall give the raw material grade.

Table 1 Classification of
Materials (Clause 4)

Sl No.	Material Classification (Grade)	MRS (Minimum Required Strength) of PE Resin at 20°C for 50 Year Life MPa	Design Stress at 20°C MPa
(1)	(2)	(3)	(4)
i)	PE 63	6.3	5
ii)	PE 80	8.0	6.3
iii)	PE 100	10.0	8

NOTES

- 1 The maximum allowable operating pressure (MAOP) of a pipe is obtained by the equations given in 3.18.
- 2 Pressure reduction-coefficients for calculating maximum allowable operating pressure at temperatures higher than 20°C are given in Fig. 1.
- 3 As an operating water temperature of 27°C has been considered, a pressure reduction co-efficient, f_r , of 0.85 has been taken from Fig. 1 and used in the equation given at 3.18 for determining the maximum allowable operating pressure at 27°C (nominal pressure). This ensures that no further correction factor is required for over ground or underground water supply systems.
- 4 The wall thicknesses are calculated based on maximum allowable operating pressure at 27°C rounded up to nearest SDR series (PN values). The pressure class (pressure rating) is also rounded to standard series. Tolerances calculated from $(0.1e_{Min}+0.1)$ mm rounded up to the next 0.1 mm. considering operational production problems, maximum wall thickness of pipes are considered around 130 mm.
- 5 The pipes are recommended for maximum water temperature of +45°C.
- 6 The pipes may also be used up to the ambient temperature of -40°C without any correction factor as long as the water temperatures inside the pipe do not exceed the operating temperature of 27°C. Intermittent increase in the ambient or water temperatures because of weather changes would not have any deleterious effect on the pipe's long-term performance.

5. MATERIAL

5.1 General

The material used for the manufacture of pipes should not constitute toxic hazard, should not support microbial growth and should not give rise to unpleasant taste or odour, cloudiness or discoloration of water. Pipe manufacturers shall obtain a certificate to this effect from the manufacturer of raw material.

5.2 Polyethylene Resin

PE resin used for the manufacture of pipes shall conform to parameters mentioned in Table 2. In addition, the resin shall conform to requirement of NS 110.

The material classification and conformity to Table 2 shall be provided by the raw material (resin) manufacturer with documentation duly certified by resin manufacturer.

5.3 Carbon Black Master Batch

Carbon black master batch shall be manufactured from a mixture of the following:

- Polyethylene, which may include co-polymers of ethylene and higher olefin, in which the higher olefin constituent does not exceed 10 percent (mass/mass) and density of 910-950 kg/m³.
- The constituents used should be from the positive list of constituents of PE, in contact with food stuff, pharmaceutical and drinking water as per NS.... and should not constitute a toxic hazard, shall not support microbial growth and shall not give rise to an unpleasant taste or odour, cloudiness or discoloration of the water.
- Loading of carbon black should not exceed 50 percent (m/m).
- Ash content <0.1 percent.
- Carbon black used in carbon black master batch shall comply with the following requirements:

- Density: 1.5 to 2.0 g/ml.
- Toluene extract not more than 0.1 percent (m/m) .
- Maximum volatile matter 0.9 percent (m/m) (see Annex C).
- Carbon black particle size should be less than 0.025 μ .

NOTE — A test report or confirmative certificate may be obtained from the carbon black master batch manufacturer.

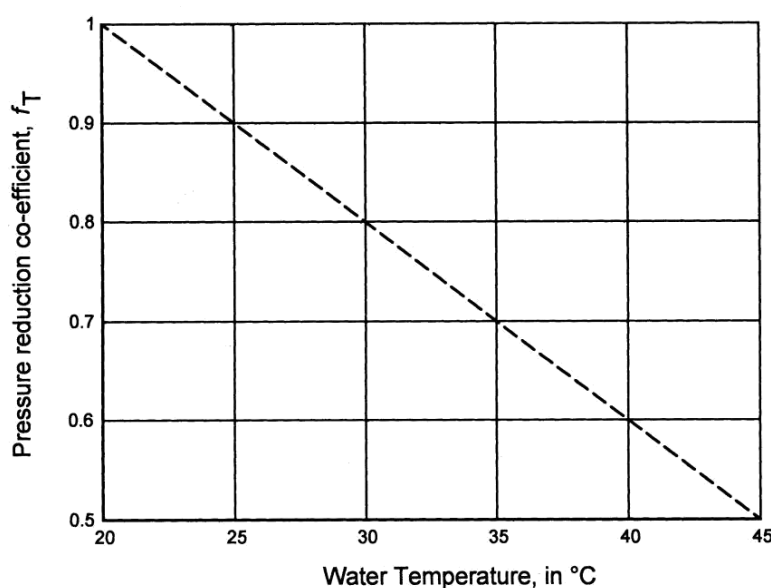


FIG. 1 PRESSURE REDUCTION CO-EFFICIENT FOR WATER TEMPERATURES ABOVE 20°C

Table 2 Characteristics of PE Resin as
Granules (Clauses 5.2 and 6.1.1)

Sl No. (1)	Characteristics (2)	Units (3)	Requirements (4)	Test Parameters (5)	Test Method (6)
i)	Base density	kg/m ³	930-965	27°C	NS 110
ii)	Melt flow rate	g /10 min	0.2 to 1.1 (both inclusive)	190°C using a 5 kg mass	NS 97
iii)	Thermal stability (oxidation induction time)	min	≥ 20	200°C, isothermal	Annex B
iv)	Volatile matter	mg/kg	≤ 350	Number of test pieces	01 Annex C
v)	Water content ¹⁾	mg/kg	≤ 300	Number of test pieces	01 Annex D

¹⁾ This requirement is only applicable if the measured volatile content is not in conformity with its specified requirement. In case of dispute, the requirement for water content shall apply. (If the water content exceeds the limit, drying to be done prior to use).

5.4 Anti-Oxidant

The percentage of anti-oxidant used shall not be more than 0.3 percent by mass of finished resin. The anti-oxidant used shall be physiologically harmless and shall be selected from the list given in NS... The raw material supplier shall provide test certificate containing the Anti-Oxidant percentage and the name of the Anti-Oxidant.

5.5 Rework Material

Clean, reprocessible material generated from a manufacturer's own production and works testing of products according to this standard may be used if it is derived from the same raw material as used for the relevant production however it shall not be more than 10%. Reprocessible material obtained from external sources and recycled material shall not be used.

6. PIPE DESCRIPTION

6.1 Pipes shall be designated according to the grade of material (see 6.1.1) followed by pressure rating (PN) (see 6.1.4), nominal outside diameter (see 6.1.3) and standard dimension ratio (SDR) (see 6.1.2), For example PE 80, PN 5, DN 200 SDR 26, indicates pipe pertaining to material grade PE 80, pressure rating 5, nominal outside diameter 200 mm & wall thickness corresponding to SDR 26.

6.1.1 The grade of material shall be as given in Table 1.

6.1.2 The standard dimension ratio of pipes covered in this standard are:

SDR 41, SDR 33, SDR 26, SDR 21, SDR 17, SDR 13.6, SDR 11, SDR 9, SDR 7.4 and
SDR 6.

6.1.3 The nominal outside diameter of pipes covered in this standard are:

16, 20, 25, 32, 40, 50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355,
400, 450, 500, 560, 630, 710, 800, 900, 1000, 1200, 1400, 1600, 1800, 2000 mm.

6.1.4 The pipes shall be classified by pressure rating (PN) corresponding to the maximum allowable operating pressure at 27°C, as follows:

Pressure Rating of Pipe (1)	Maximum Allowable Operating Pressure at 27°C (2)
PN 2	0.20 MPa
PN 2.5	0.25 MPa
PN 3	0.30 MPa
PN 3.2	0.32 MPa
PN 4	0.40 MPa
PN 5	0.50 MPa
PN 6	0.60 MPa
PN 8	0.80 MPa
PN 10	1.00 MPa
PN 12.5	1.25 MPa
PN 16	1.60 MPa
PN 20	2.00 MPa

6.2 Colour

The colour of the pipe shall be black with blue identification stripes.

6.2.1 Identification Stripes

Each black pipe with identification stripes shall contain minimum of three longitudinal stripes of minimum width of 3 mm in blue colour, circumferentially distributed. These stripes shall be co-extruded during pipe manufacturing and shall not preferably be more than 0.2 mm in depth for wall thickness up to 10 mm and 0.5 mm beyond 10 mm. The material of the stripes shall be of the same type as used in the base compound for the pipe.

7. GEOMETRIC CHARACTERISTICS OF PIPE

7.1 Visual Appearance

The internal and external surface of the pipe shall be smooth, clean and free from grooving and other defects. The ends of the pipes shall be cleanly cut square with the axis of the pipe to within the tolerances given below and free from deformity. Slight shallow longitudinal grooves or irregularities in the wall thickness shall be permissible, provided that the wall thickness remains within the permissible limits.

Nominal diameter DN Mm (1)	Maximum Out of Square of Pipe End Mm (2)
16 to 75	2
90 to 125	3
140 to 180	4
200 to 280	5
Above 280	7

7.2 Length

The length of straight pipe shall be 5 m to 20 m as agreed to between the manufacturer and purchaser. Short lengths of 3 m (minimum) up to the maximum of 10 percent of the total supply may be permitted.

7.3 Coiling

The pipes shall be coiled such that localized deformation, for example, buckling and kinking is prevented. The minimum internal diameter of the coil shall not be less than 18 d_n . The length of the coiled pipes shall be as agreed between the manufacturer and purchaser.

7.4 Dimensions

The mean outside diameters, d_{em} , and the out-of-roundness (ovality) of the pipes for different nominal diameters covered in the standard shall be in accordance with Table 3. The minimum and maximum wall thickness of pipes shall be as given in Table 4.

7.4.1 Methods of Measurement

7.4.1.1 Mean outside diameter of the pipe shall be the average of two measurements taken using a vernier at right angles for pipes up to 50 mm diameter. For higher sizes, the diameter shall be measured using a flexible Pi tape or a circometer, having an accuracy of not less than 0.1 mm. The wall thickness shall be measured by a dial vernier or ball ended micrometer. The resulting dimension shall be expressed to the nearest 0.1 mm.

NOTES

- 1 The outside diameter shall be measured at a distance of at least 300 mm from the end of the pipe.
- 2 In the case of discrepancy, the dimension of pipes shall be measured after conditioning at room temperature ($27^{\circ}\text{C} \pm 2^{\circ}\text{C}$) for 4 h.

Table 3 Mean Outside Diameters and Out-of-roundness
(Clause 7.4)

All dimensions in millimetres.					
Sl No.	Nominal Size DN/OD	Nominal Outside Diameter	Mean Outside Diameter		Maximum Out-of-Roundness (Ovality)
(1)	(2)	d _n (3)	(d _{em} , Min) (4)	(d _{em} , Max) (5)	(6)
i)	16	16	16.0	16.3	1.2
ii)	20	20	20.0	20.3	1.2
iii)	25	25	25.0	25.3	1.2
iv)	32	32	32.0	32.3	1.3
v)	40	40	40.0	40.4	1.4
vi)	50	50	50.0	50.4	1.4
vii)	63	63	63.0	63.4	1.5
viii)	75	75	75.0	75.5	1.6
ix)	90	90	90.0	90.6	1.8
x)	110	110	110.0	110.7	2.2
xi)	125	125	125.0	125.8	2.5
xii)	140	140	140.0	140.9	2.8
xiii)	160	160	160.0	161.0	3.2
xiv)	180	180	180.0	181.1	3.6
xv)	200	200	200.0	201.2	4.0
xvi)	225	225	225.0	226.4	4.5
xvii)	250	250	250.0	251.5	5.0
xviii)	280	280	280.0	281.7	9.8
xix)	315	315	315.0	316.9	11.1
xx)	355	355	355.0	357.2	12.5
xxi)	400	400	400.0	402.4	14.0
xxii)	450	450	450.0	452.7	15.6
xxiii)	500	500	500.0	503.0	17.5
xxiv)	560	560	560.0	563.4	19.6
xxv)	630	630	630.0	633.8	22.1
xxvi)	710	710	710.0	716.4	—
xxvii)	800	800	800.0	807.2	—
xxviii)	900	900	900.0	908.1	—
xxix)	1 000	1 000	1 000.0	1 009.0	—
xxx)	1 200	1 200	1 200.0	1 210.8	—
xxxi)	1 400	1 400	1 400.0	1 412.6	—
xxxii)	1 600	1 600	1 600.0	1 614.4	—
xxxiii)	1 800	1 800	1 800.0	1 816.2	—
xxxiv)	2 000	2 000	2 000.0	2 018.0	—

NOTE — For coiled pipes and for straight lengths with diameters ≥ 710 mm, the maximum out-of-roundness shall be as agreed to between the manufacturer and the purchaser.

7.4.1.2 Ovality

Ovality shall be measured at 300 mm away from cut end, using a scale having suitable graduations. For coiled pipes and pipes having SDRs ≥ 21 , re-rounding shall be permissible before the measurement of ovality. The ovality shall be measured during extrusion and prior to coiling.

8. PERFORMANCE REQUIREMENTS

8.1 Hydraulic Characteristics

8.1.1 Internal Pressure Creep Rupture Test of Pipe

When subjected to internal pressure creep rupture test in accordance with procedure given in Annex E and test parameters as specified in Table 5, the pipes under test shall show no signs of localized swelling, leakage or weeping and shall not burst during the prescribed test period.



Table 4 Standard Dimension Ratio (SDR) and Corresponding Wall Thicknesses (e) of Pipes
(Clauses 7.4 and E-4.3)

SDR	SDR 41		SDR 33		SDR 26		SDR 21		SDR 17		SDR 13.6		SDR 11		SDR 9		SDR 7.4		SDR 6	
Nominal Pressure (PN) Bar																				
PE 63	PN 2		PN 2.5		PN 3.2		PN 4		PN 5		PN 6		PN 8		PN 10		PN 12.5		PN 20	
PE 80	PN 2.5		PN 3.2		PN 4		PN 5		PN 6		PN 8		PN 10		PN 12.5		PN 16		PN 20	
PE 100	PN 3		PN 4		PN 5		PN 6		PN 8		PN 10		PN 12.5		PN 16		PN 20		-	
Wall Thicknesses																				
Nominal OD d _n , mm	e _{Min} mm	e _{Max} mm	e _{Min} mm	e _{Max} mm	e _{Min} mm	e _{Max} mm	e _{Min} mm	e _{Max} mm	e _{Min} mm	e _{Max} mm	e _{Min} mm	e _{Max} mm	e _{Min} mm	e _{Max} mm	e _{Min} mm	e _{Max} mm	e _{Min} mm	e _{Max} mm	e _{Min} mm	e _{Max} mm
16															1.8	2.1	2.2	2.5	2.7	3.1
20															1.9	2.2	2.3	2.6	2.7	3.1
25											1.9	2.2	2.3	2.6	2.9	3.2	3.4	3.8	4.2	4.7
32										1.9	2.2	2.4	2.7	2.9	3.3	3.6	4.1	4.4	4.9	5.4
40							1.9	2.2	2.4	2.7	3.0	3.4	3.7	4.2	4.5	5.1	5.4	6.0	6.7	7.5
50					2.0	2.3	2.4	2.7	3.0	3.4	3.7	4.2	4.6	5.2	5.6	6.3	6.8	7.6	8.4	9.3
63					2.5	2.9	3.0	3.4	3.7	4.2	4.7	5.3	5.8	6.5	7.0	7.8	8.6	9.6	10.5	11.7
75	1.9	2.2	2.3	2.6	2.9	3.3	3.6	4.1	4.5	5.1	5.6	6.3	6.9	7.7	8.4	9.3	10.2	11.3	12.5	13.9
90	2.2	2.5	2.8	3.2	3.5	4.0	4.3	4.8	5.3	5.9	6.7	7.5	8.2	9.1	10.0	11.1	12.2	13.5	15.0	16.6
110	2.7	3.1	3.4	3.8	4.3	4.8	5.3	6.0	6.5	7.3	8.1	9.0	10.0	11.1	12.3	13.6	14.9	16.5	18.4	20.3
125	3.1	3.5	3.8	4.3	4.8	5.4	6.0	6.7	7.4	8.2	9.2	10.2	11.4	12.7	13.9	15.4	16.9	18.7	20.9	23.1
140	3.5	4.0	4.3	4.8	5.4	6.0	6.7	7.5	8.3	9.2	10.3	11.4	12.8	14.2	15.6	17.3	19.0	21.0	23.4	25.8
160	3.9	4.4	4.9	5.5	6.2	6.9	7.7	8.6	9.5	10.6	11.8	13.1	14.6	16.2	17.8	19.7	21.7	24.0	26.7	29.5
180	4.4	4.9	5.5	6.2	7.0	7.8	8.6	9.6	10.6	11.8	13.3	14.7	16.4	18.1	20.0	22.1	24.4	26.9	30.0	33.1
200	4.9	5.5	6.1	6.8	7.7	8.6	9.6	10.7	11.8	13.1	14.7	16.3	18.2	20.1	22.3	24.6	27.1	29.9	33.4	36.8
225	5.5	6.2	6.9	7.7	8.7	9.7	10.8	12.0	13.3	14.7	16.6	18.4	20.5	22.7	25.0	27.6	30.5	33.7	37.5	41.4
250	6.1	6.8	7.6	8.5	9.7	10.8	12.0	13.3	14.7	16.3	18.4	20.3	22.8	25.2	27.8	30.7	33.8	37.3	41.7	46.0
280	6.9	7.7	8.5	9.5	10.8	12.0	13.4	14.8	16.5	18.3	20.6	22.8	25.5	28.2	31.2	34.4	37.9	41.8	46.7	51.5
315	7.7	8.6	9.6	10.7	12.2	13.5	15.0	16.6	18.6	20.6	23.2	25.6	28.7	31.7	35.0	38.6	42.6	47.0	52.5	57.9
355	8.7	9.7	10.8	12.0	13.7	15.2	16.9	18.7	20.9	23.1	26.1	28.8	32.3	35.6	39.5	43.6	48.0	52.9	59.2	65.2
400	9.8	10.9	12.2	13.5	15.4	17.0	19.1	21.1	23.6	26.1	29.5	32.6	36.4	40.1	44.5	49.1	54.1	59.6	66.7	73.5
450	11.0	12.2	13.7	15.2	17.3	19.1	21.5	23.8	26.5	29.3	33.1	36.5	40.9	45.1	50.0	55.1	60.9	67.1	75.0	82.6
500	12.2	13.5	15.2	16.8	19.3	21.3	23.9	26.4	29.5	32.6	36.8	40.6	45.5	50.2	55.6	61.3	67.6	74.5	83.4	91.8
560	13.7	15.2	17.0	18.8	21.6	23.9	26.7	29.5	33.0	36.4	41.2	45.4	50.9	56.1	62.3	68.6	75.7	83.4	93.4	102.8
630	15.4	17.0	19.1	21.1	24.3	26.8	30.0	33.1	37.1	40.9	46.4	51.1	57.3	63.1	70.0	77.1	85.2	93.8	105.0	115.6
710	17.3	19.1	21.6	23.9	27.3	30.1	33.9	37.4	41.8	46.1	52.2	57.5	64.6	71.2	78.9	86.9	96.0	105.7	118.4	130.3
800	19.5	21.6	24.3	26.8	30.8	34.0	38.1	42.0	47.1	51.9	58.9	64.9	72.8	80.2	88.9	97.9	108.2	119.1		
900	22.0	24.3	27.3	30.1	34.7	38.3	42.9	47.3	53.0	58.4	66.2	72.9	81.9	90.2	100.0	110.1	121.7	134.0		
1000	24.4	26.9	30.3	33.4	38.5	42.5	47.7	52.6	58.9	64.9	73.6	81.1	90.9	100.1	111.2	122.4				
1200	29.3	32.3	36.4	40.1	46.2	50.9	57.2	63.0	70.6	77.8	88.3	97.2	109.1	120.1						
1400	34.1	37.6	42.5	46.9	53.9	59.4	66.7	73.5	82.4	90.7	103.0	113.4								
1600	39.0	43.0	48.5	53.5	61.6	67.9	76.2	83.9	94.2	103.7	117.7	129.6								
1800	43.9	48.4	54.6	60.2	69.3	76.3	85.8	94.5	105.9	116.6										
2000	48.8	53.8	60.6	66.8	77.0	84.8	95.3	104.9	117.7	129.6										

NOTES

- 1 Tolerances calculated from $(0.1 e_{\text{Min}} + 0.1)$ mm rounded up to the next 0.1 mm.
- 2 All pressure ratings are calculated at 27°C and rounded up to nearest pressure class.
- 3 Considering operational problems, maximum wall thickness of pipes are considered around 130 mm.

Table 5 Hydraulic Characteristic Requirements of Pipes (Clauses 8.1.1 and E-4.3)

Sl No.	Test Temp °C	Test Duration h	Induced Hoop Stress MPa		
			PE 63	PE 80	PE 100
(1)	(2)	(3)	(4)	(5)	(6)
i)	27	100	6.9	8.6	10.7
ii)	80	48	3.8	4.9	5.7
iii)	80	165	3.5	4.5	5.4
iv)	80	1000	3.2	4.0	5.0

8.1.2 Internal Pressure Creep Rupture Test of Pipe Joints

The pipe joints shall also be tested for the hydraulic characteristic requirement by subjecting the butt fusion joint or electro fusion joint of a pipe to internal pressure creep rupture test at 80°C for 48 h as per Table 5 and in accordance with the method given in Annex E. The pipe joints under test shall show no signs of localized swelling, leakage or weeping and shall not burst during the prescribed test period.

8.2 Longitudinal Reversion Test

When tested in accordance with the method given in Annex F, the value of the longitudinal reversion shall not be greater than 3 percent.

8.3 Carbon Black Content and Dispersion

When tested from a composite sample of minimum three pipes, in accordance with NS 97 the carbon black content shall be within 2.5 ± 0.5 percent, and the dispersion of carbon black shall be satisfactory.

8.4 Melt Flow Rate

When tested from a composite sample of minimum three pipes as per NS 97 at 190° C with nominal load of 5 kgf, MFR shall not deviate from the MFR of the resin by more than 30 percent.

8.5 Oxidation Induction Time

The minimum oxidation induction time of the pipe when tested in accordance with the method given in Annex B shall be not less than 20 min.

8.6 Overall Migration

When tested from a sample of minimum 3 pipes as per NS..., the overall migration of constituent shall be within the limits stipulated in NS....

8.7 Density

When tested from a composite sample of minimum of 3 pipes as per NS 110, the base density of the pipe shall be between 930 to 965 kg/m³.

8.8 Tensile Strength for Butt-fusion

When tested according to Annex G, the test specimens prepared by punching /machining from pipebutt fusion sample preferably 110 mm Dia/SDR 11 shall show ductile failure. If the sample shows brittle fail the test may be considered as a failure.

NOTE — If 110 mm/SDR 11 pipes are not being manufactured, test shall be carried out on the nearest, preferably higher size/ SDR ratio being manufactured.

8.9 Elongation at Break

When tested according to Annex H, the test specimens punched/machined from pipe samples, shall meet requirement as per Table 6.

Table 6 Elongation at Break Requirements of Pipes (Clause 8.9)

S. No. (1)	Characteristics (2)	Requirements (3)	Test Parameters		Test Method Ref to (6)
			Parameter (4)	Value (5)	
i	Elongation at break for $e \leq 5$ mm	≥ 350 Percent	Test piece shape Test speed	Type 2 100 mm/min	Annex H
ii	Elongation at break for 5 mm $< e \leq 12$ mm	≥ 350 Percent	Test piece shape Test speed	Type 1 ¹⁾ 50 mm/min	Annex H
iii	Elongation at break for $e > 12$ mm	≥ 350 Percent	Test piece shape Test speed	Type 1 ¹⁾ 25 mm/min	Annex H
			OR		
			Test piece shape Test speed	Type 3 ¹⁾ 10 mm/min	

¹⁾ Where practical, machined type 2 test pieces may be used for pipe wall thickness ≤ 25 mm. The test may be terminated when the requirement is met, without continuing until the rupture of the test piece.

8.10 Slow Crack Growth Rate

When subjected to test parameters as given below and tested in accordance with the procedure given in Annex E, the notched test specimens prepared from pipe size of preferably 110 mm and SDR 11 in accordance with Annex J shall show no signs of localized swelling, leakage or weeping and shall not burst during the prescribed test period.

Test Temperature	Test Duration	Internal Test Pressure, MPa		
$^{\circ}\text{C}$	H	PE 63	PE 80	PE 100
80 ± 1	500 h	0.64	0.8	0.92

NOTE — If 110 mm / SDR 11 pipes are not being manufactured, test shall be carried out on the nearest, preferably higher size / SDR ratio being manufactured.

9. SAMPLING, FREQUENCY OF TESTS AND CRITERIA FOR CONFORMITY

9.1 Type Tests

9.1.1 Type tests are intended to prove the suitability and performance of a new composition, a new technique or a new size of a pipe. Such tests, therefore, need be applied only when a change is made in polymer composition or method of manufacture, or when a new size of pipe is to be introduced. Even if

no change is envisaged, type test shall be done at least once in two years on each pressure rating and grade of pipe of the highest size manufactured during the period.

- 9.1.2** Three samples of the same grade, same size and same SDR selected at random shall be tested for compliance with the requirements of the type tests as given in Table 7.

- 9.1.3** If all the samples pass the requirements of the type test, the type of the pipe under consideration shall be considered eligible for type approval.
- 9.1.4** In case of any of the samples fails in the type test, the testing authority, at its discretion, may call for fresh samples not exceeding the original number and subject them to the type test again. If in repeat test, no single failure occurs, the type of pipe under consideration shall be considered eligible for type approval. If any of the samples fails in the repeat tests, the type of pipe shall not be approved. The manufacturer or the supplier may be asked to improve the design and resubmit the product for type approval.
- 9.1.5** At the end of the validity period (normally one year for internal pressure creep rupture test at 27°C for 100 h and internal pressure creep rupture test for joints at 80°C for 48 h and two years for all other type tests) or earlier as may be necessary, the testing authority may call for fresh samples for type-test for the purpose of type approval.

Table 7 Type Tests

(Clause 9.1.2)

Sl No. (1)	Description of Test (2)	Sample Requirement Size (3)	Clause (4)
i)	Tensile strength for butt-fusion	3	8.8
ii)	Overall migration	3	8.6
iii)	Internal pressure creep rupture test (hydrostatic resistance test) at 27°C for 100 h	3	8.1.1
iv)	Internal pressure creep rupture test (hydrostatic resistance test) at 80°C for 165 h	3	8.1.1
v)	Internal pressure creep rupture test (hydrostatic resistance test) at 80°C for 1 000 h test	3	8.1.1
vi)	Slow crack growth rate test	3	8.10
vii)	Internal Pressure Creep Rupture Test (Hydrostatic Creep Rupture Test) for Joints at 80°C for 48 h	3	8.1.2

9.2 Acceptance Test

- 9.2.1** Acceptance tests are carried out on sample selected from a lot for the purpose of acceptance of the lot.

9.2.2 Lot

All pipes of the same grade, same size, same SDR and also manufactured essentially under similar conditions of manufacture shall constitute a lot. For ascertaining conformity of the lot to the requirements of this standard, samples for acceptance tests (see Table 8) shall be selected and prepared after conditioning at $27 \pm 2^\circ\text{C}$ and tested for compliance as per Table 8.

Table 8 Acceptance Tests(Clause 9.2.2)

Sl No.	Description of Test	Sample Requirement Size	Clause
i)	Visual appearance and dimensions	Table 9	7.1 and 7.4
ii)	Melt flow rate	Table 10	8.4
iii)	Density	Table 10	8.7
iv)	Reversion test	Table 10	8.2
v)	Elongation at break	Table 10	8.9
vi)	Carbon black content	Table 10	8.3
vii)	Carbon black dispersion	Table 10	8.3
viii)	Oxidation Induction	Table 10	8.5
ix)	Internal pressure creep rupture test (hydrostatic resistance test) at 80°C for 48 h	Table 10	8.1.1

9.2.3 Conformity to Dimensional and Visual Characteristics

9.2.3.1 The number of test samples shall be in accordance with Table 9.

9.2.3.2 These pipes shall be selected at random from the lot and in order to ensure the randomness of selection, a random number table shall be used. For guidance and use of random number tables, NS 145 may be referred. For the above purpose, each length of the coil of a given size, grade and SDR shall be considered as one pipe. In the absence of a random number table, the following procedure may be adopted.

Starting from any pipe in the lot, count them as 1, 2, 3, 4 etc, up to r and so on where r is the integral part of N/n , N being the number of pipes in the lot and n is the number of pipes in the samples. Every r^{th} pipe so counted shall be drawn so as to constitute the required sample size.

9.2.3.3 The number of pipes given for the first sample in col 4 of Table 9 shall be examined for visual and dimensional requirements as given in 7.1 and 7.4 respectively. A pipe failing to satisfy any of these requirements shall be considered as defective. The lot shall be deemed to have satisfied these requirements, if the number of defectives found in the first sample are less than or equal to the corresponding acceptance number given in col 6 of Table 9. The lot shall be deemed not to have met these requirements if the number of defectives found in the first sample is greater than or equal to the corresponding rejection numbers given in col 7 of Table 9. If, however, the number of defectives found in the first sample lies between the corresponding acceptance and rejection numbers given in col 6 and 7 of Table 9, the second sample of the size given in col 4 of Table 9 shall be taken and examined for these requirements. The lot shall be considered to have satisfied these, requirements, if the number of defectives found in the cumulative sample is less than or equal to the corresponding acceptance number given in col 6 of Table 9 otherwise not. In case, the sample size is equal to or less than the lot size, 100 percent inspection shall be done for these tests and all the samples from the lot which pass these tests shall be tested for other acceptance tests.

9.2.4 Conformity to Acceptance Tests Other Than Dimensional and Visual Characteristics

The lot having satisfied dimensional and visual requirements shall be tested for other acceptance tests as given in Table 8. The number of test samples selected from the lot for subjecting to these tests shall be in accordance with Table 10. For the above purpose, each length of the coil of a given size, grade and SDR shall be considered as one pipe. The lot shall be considered to have met the requirements of these tests, if none of samples tested fails.

Table 9 Scale of Sampling for Dimensional Requirements
(Clauses 9.2.3.1 and 9.2.3.3)

Sl No.	No. of Pipes in the Lot	Sample No.	Sample Size	Cumulative Sample Size	Acceptance No.	Rejection No.
i)	Up to 150	First	13	13	0	2
		Second	13	26	1	2
ii)	151 to 280	First	20	20	0	3
		Second	20	40	3	4
iii)	281 to 500	First	32	32	1	4
		Second	32	64	4	5
iv)	501 to 1200	First	50	50	2	5
		Second	50	100	6	7
v)	1201 to 3200	First	80	80	3	7
		Second	80	160	8	9
vi)	3201 to 10000	First	125	125	5	9
		Second	125	250	12	13
vii)	10001 to 35000	First	200	200	7	11
		Second	200	400	18	19

Table 10 Scale of Sampling for Acceptance Tests Other Than Dimensional Requirements
(Clauses 9.2.2 and 9.2.4)

Sl No.	No. of Pipes in the Lot	Sample Size
a) For Pipe Sizes Upto 500 mm		
i)	Up to 150	3
ii)	151 to 1200	5
iii)	1201 to 35000	8
b) For Pipe Sizes Above 500 mm		
iv)	Up to 500	3
v)	501 to 1 200	5
vi)	1201 to 35000	5

10. MARKING

10.1 Each straight length/coil of pipe shall be clearly and indelibly marked in white/yellow colour using ink/ paint or inkjet print or hot embossed on white base, at every 1 m throughout the length of pipe/coil with the information given in 10.1.1.

10.1.1 The marking on the pipe shall carry the following minimum information:

- Manufacturer's name/trade-mark;
- Material designation, PE... (see 6.1);
- Pressure rating;
- Standard dimension ratio (SDR);
- Nominal Size; and
- Lot Number/Batch Number, containing information of date of manufacture shall include the details of production in the following manner

Year	Month	Day	Machine No.	Shift
Xxxx	Xx	Xx	xx	Xx

10.2 NS Certification Marking

Each pipe/coil may also be marked with the Standard Mark.

10.2.1 The use of the Standard Mark is governed by the provisions of the Nepal Standards (Certification Mark) Act, 2037 and the Rules and Regulations made there under. The details of conditions under which a license for the use of the Standard Mark may be granted to manufacturers or producers may be

obtained from the Nepal Bureau of Standards and Metrology.



ANNEX A

(Clause 3.17)

THE RELATIONSHIP BETWEEN MINIMUM REQUIRED STRENGTH, NOMINAL PRESSURE AND STANDARD DIMENSION RATIO

A-1 The relation between nominal pressure (at 27°C) (PN), design stress at 20°C (σ), and the standard dimension ratio (SDR) is given by the following equation:

$$PN = \frac{20\sigma}{SDR - 1} \times f_T$$

Where, $\sigma = MRS/C$

PN = nominal pressure at 27°C, in bar

MRS = minimum required strength of the material class (see

Table 1), C = overall service design co-efficient = 1.25,

f_T = pressure reduction co-efficient = 0.85 for 27°C (from Fig. 1), and

SDR = standard dimension ratio.

The Nominal Pressure (PN) for various material class and different SDRs has been calculated using the above equation and is given in the informal Table below

However, if a higher value for C is required, the PN values will have to be recalculated using the above equation considering the calculated design stress, σ for each class. A higher value for C can also be obtained by choosing a higher PN class.

Sl. No.	SDR	Standard Dimension Ratio (SDR) Used in Wall Thickness Chart (Table 5) at 27°C		
		Nominal Pressure for Material Class in Bar		
		PE 63	PE 80	PE 100
(1)	(2)	(3)	(4)	(5)
i)	41	2.0	2.5	3.0
ii)	33	2.5	3.2	4.0
iii)	26	3.2	4.0	5.0
iv)	21	4.0	5.0	6.0
v)	17	5.0	6.0	8.0
vi)	13.6	6.0	8.0	10.0
vii)	11	8.0	10.0	12.5
viii)	9	—	12.5	16.0
ix)	7.4	—	16.0	20.0
x)	6	—	20.0	—

ANNEX B

[Table 2 Sl No. (iii)]

METHOD FOR DETERMINATION OF OXIDATION INDUCTION TIME (THERMAL STABILITY)

B-1 APPARATUS AND EQUIPMENT

B-1.1 A differential thermal analyzer (DTA)/differential scanning calorimeter (DSC), calibrated using pure indium and pure tin to give values which lie within $156.6 \pm 0.5^\circ\text{C}$ and $231.9 \pm 0.5^\circ\text{C}$ respectively. The test cell shall allow the cell to be purged within 1 min by use of successive gases at the specified flow rate.

B-1.2 Aluminium pans, large enough to accommodate a test piece in solid or molten form.

B-2 TEST PIECES

A sample from the pipe shall be taken by use of a core drill directed radially through the pipe wall. The diameter of the core shall be just less than the inner diameter of the sample pan of the thermal analyzer, and care should be taken not to overheat the sample during the coring operation. Using a scalpel, cut the test pieces that weigh 15 ± 0.5 mg in the form of discs from the core sample, selecting the inner surface.

Outer surface and mid-wall as the minimum sample points which are to be tested individually.

B-3 PROCEDURE

Establish a nitrogen flow of $50 \text{ cm}^3/\text{min} \pm 10$ percent through the differential thermal analyzer or differential scanning calorimeter cell. Check that when a switchover to oxygen is made the gas flow will continue at the rate of $50 \text{ cm}^3/\text{min} \pm 10$ percent and then revert to a nitrogen flow of $50 \text{ cm}^3/\text{min} \pm 10$ percent.

Place a $15 \text{ mg} \pm 0.5 \text{ mg}$ cylindrical polyethylene specimen in an open aluminium pan and an empty aluminium reference pan into the cell. Set the instrument to run isothermally at $200^\circ\text{C} \pm 0.1^\circ\text{C}$ raising the temperature at a rate of $20^\circ\text{C}/\text{min}$ and allowing the temperature to stabilize. Make any corrections to the heater voltage to bring the specimen temperature to $200^\circ\text{C} \pm 0.1^\circ\text{C}$. Start to record the thermo graph.

When stable conditions exist under the nitrogen flow, which should be the case after 5 min switch over to oxygen and mark this point on the thermo graph. The cell should be purged within 1 min of atmosphere changeover. Continue to run the thermo graph until the oxidation exotherm has occurred, and has reached its maximum.

B-4 INTERPRETATION OF RESULTS

The thermal stability of the specimen is the time taken in minutes from the introduction of oxygen to the intercept of the extended baseline and the tangent drawn to the exotherm at the point of maximum slope.

ANNEX C

[Table 2 SI No. (iv)]

METHOD FOR DETERMINATION OF VOLATILE CONTENT IN POLYETHYLENE PIPING MATERIALS AND COMPONENTS

C-1 PRINCIPLE

The method consists of determining the loss of mass of a test piece which has been put in a drying oven at a given temperature. The method is used for determining the content of material which volatiles at 105°C in polyethylene (PE) piping materials. This method is also applicable to moulding and extrusion materials. It can be also applicable to components in PE piping systems.

C-2 APPARATUS

C-2.1 Drying Oven or Equivalent Device, capable of maintaining the temperature at $(105 \pm 2)^\circ\text{C}$ at the position for the cup(s) (see C-3.2 and C-5.4).

C-2.2 A Cylindrical Glass Weighing Cup, with a diameter of 35 mm capable of containing a test piece (see C-4.1), a minimum volume of 50 ml and a corresponding lid.

C-2.3 A Desiccators

C-2.4 An Analytical Balance or Equivalent, capable of weighing to the nearest 0.1 mg.

C-3 TEST PIECE

C-3.1 Each test piece shall comprise an approximately 25 g portion of a sample representative of the material before molding or extrusion, as applicable, or cut in accordance with the referring standard from a cross section of a pipe or fitting.

NOTE — If test sample utilize different sampling weights or are taken from different sources, for example raw material granulate or finished product, then there may be a difference in test results obtained. This may depend on, for example, the surface area/mass ratio or the maximum thickness of material. To demonstrate correlation with results for granulate sample determined in accordance with this method, the preparation of samples from finished products may have to be modified.

C-3.2 The number of test pieces shall be as specified in Table 2.

C-4 PROCEDURE

C-4.1 Clean and dry a weighing cup and its lid until constant weight is achieved and store them in the desiccators for at least 0.5 h at room temperature.

C-4.2 Take the weighing cup and its lid out of the desiccator and determine their combined mass, m_0 to the nearest 0.1 mg.

C-4.3 Fill the cup with about 25 g portion of the sample and determine the mass, m_1 , of the cup, lid and the test portion to the nearest 0.1 mg.

C-4.4 Put the weighing cup in the drying oven zone which is kept at $(105 \pm 2)^\circ\text{C}$ (see C-3.1).

C-4.5 After a period of 65 ± 5 min, take the weighing cup out of the drying oven and put the cup in the desiccator for at least 1 h at room temperature.

C-4.6 Cover the cup with the lid. Weigh the cup, lid and residual material to the nearest 0.1 mg, as mass_2 .

C-5 CALCULATION

Calculate the volatile material content, m_v , of the test portion using the following equation:

$$m_v = \frac{m_1 - m_2}{m_1 - m_0} \times 10^6$$

Where,

m_v = volatile material content in milligrams per kilogram (mg/kg) at $(105 \pm$

$2)^\circ\text{C}$; m_0 = mass in grams of the empty weighing cup and its lid;

m_1 = mass in grams of the weighing cup and its lid plus the test portion; and

m_2 = mass in grams of the weighing cup and its lid plus the residual material after 1 h at $(105 \pm 2)^\circ\text{C}$.

ANNEX D

[Table 2 SI No. (v)]

METHOD FOR DETERMINATION OF WATER CONTENT IN POLYETHYLENE PIPING MATERIALS AND COMPONENTS

D-1 PRINCIPLE

This method of determining water content of plastics

is an extraction method, in which a test portion is

extracted with anhydrous methanol and the extracted flaskwater determined by titration using the Karl Fischer method. It can be used for all plastics and is applicable

to granules having a maximum size of 4 mm × 4 mm ×

3 mm. The method do not test for water absorption(kinetics and equilibrium) of plastics.

It is suitable for

the determination of water content as low as of 0.1 Absorptionpercent or above.

d) Water Absorption Tubes with ground joints, containing calcium chloride or other drying agent.

e) Electrical or Hot-air Heaters, for the [D-3 (b)].

f) Pipettes, 50 ml capacity (automatic fillingPipettes are acceptable).

g) Woulfe Bottles, with two tubes.

h) Curved or U-shaped Water Tubes, filled with calcium chloride.

j) Rubber Pipette Filler

k) Pipette, 10 ml capacity

m) Desiccator, containing calcium chloride

n) Analytical Balance, accurate to 0.2 mg

p) Karl Fischer Apparatus, for determiningwater content.

D-2 REAGENT

During the analysis, reagents of recognized analyticalgrade should only be used.

a) Methanol, anhydrous, having water content less than 0.1 percent by mass.

b) Karl Fischer Reagent, with an equivalent factor of approximately 3 mg/ml to 5 mg/ml

of water, if the reagent is prepared; check its equivalent factor.

D-3 APPARATUS

D-4 PREPARATION OF TEST SAMPLE

D-4.1 Granules

Take a representative sample of approximately 100 g. Put the sample into a pre-dried glass flask

Ordinary laboratory apparatus and the following:

- [see D-3 (a)] and immediately close it with a stopper.
- a) Glass Flasks, 250 ml capacity provided with NOTE — It is desirable pre-dry the container in an oven, and then cools it over a suitable water absorbent, for instance silicagel.
- ground-glass or rubber stoppers.
- b) Conical Titration Flasks, 150 ml capacity, with standard ground necks and provided with D-4.2 Finished Articles
- ground-glass stoppers. Cut or saw the sample into pieces of approximate
- c) Reflux Condensers, with ground size, that is, having a maximum size of 4 mm × 4 mm × 3 mm.
- neck capable of being fitted on to
- the flasks [D-3 (b)] and on to the
- tubes [D-3 (d)].

D-5 PROCEDURE

D-5.1 Precautions

Due to the low quantities of water measured, maximum care shall be taken exercised at all times to avoid contaminating the sample with water from the sample container, the atmosphere or transfer equipment. Hygroscopic resin samples shall be protected from the atmosphere.

D-5.2 Preparation of Test Portions

Conduct the test on two test portions from the same sample. Use test portions containing 10 mg to 20 mg of water based on the estimated water content of the sample.

D-5.3 Determination

- a) Carefully dry the apparatus.
- b) Weigh each test portion the nearest 1 mg into a conical titration flask [D-3 (b)] fitted with a ground-glass stopper. Pipette 50 ml [D-3 (f)] of anhydrous methanol [D-2 (a)] into the conical flask containing the test portion. At the same time, add 50 ml of anhydrous methanol to another conical flask for a blank test. Stopper the flask. Keep the stoppered flasks in the desiccator [D-3 (m)] pending continuation of the test.
- c) Unstopper the flask and quickly attach them to reflux condensers [D-3 (c)] fitted with calcium chloride tube [D-3 (d)]. Reflux the contents of the conical flasks for 3h, then leave them for 45min to cool to room temperature.

Separate the flask from the condenser, quickly stopper them and place them in the desiccator.

- d) Use the Karl Fischer apparatus [D-3 (p)] to titrate the contents of each flask with Karl Fischer reagent [D-2 (b)].

D-6 EXPRESSION OF RESULTS

The water content w_1 expressed as a percentage by mass, for each of the two determinations is determined by the following formula:

$$w = \frac{(V_1 - V_2)T}{m \times 100}$$

where

V_1 is the volume, expressed in millilitres, of Karl Fischer reagent used for the determination;

V_2 is the volume, expressed in millilitres, of Karl Fischer reagent used for the blank test;

T is the water equivalent, expressed in the grams of water per millilitre of reagent, of Karl Fischer reagent, and

m is the mass, in gram of the test portion.

The two values for the water content shall not defer by more than 10 percent relative or 0.02 percent absolute, whichever is the greater. If the difference is greater, repeat the measurement until acceptable consecutive values are obtained and discard all unacceptable results.

The result is expressed as the average of these two determinations, rounded to the nearest 0.01 percent by mass.

ANNEX E

(iii) (Clauses 8.1.1, 8.1.2 and 8.10)

INTERNAL PRESSURE CREEP RUPTURE TEST

E-1 GENERAL

The test shall be carried out not earlier than 24 h after the pipes have been manufactured.

E-2 TEST SPECIMENS

A sample of pipe having free length between the end fittings equal to ten times the outside diameter but not less than 250 mm and not greater than 750 mm shall be taken for testing from each pipe to be tested.

E-3 APPRATUS

Equipment permitting the application of a controlled internal hydraulic pressure to the specimen which are immersed in a thermostatically controlled water-bath.

E-4 PROCEDURE

E-4.1 The pipes shall be fitted with the locking plugs at both ends in such a way that the axial force coming from the internal pressure are transmitted to the pipe. The pipe shall remain free to move in longitudinal direction.

E-4.2 Through a closable operating in one of the locking plugs, the pipe shall be filled with water at ambient temperature. It shall be put in a water bath at the applicable test temperature (permissible deviation of $\pm 1^\circ\text{C}$) and kept in the bath for minimum 1 h to adjust the temperature.

E-4.3 The pressure in the pipe shall then be increased to the test pressure (p) gradually and without shock, preferably within 10 to 30 s in the bath whose temperature has been adjusted in accordance with E-4.2. The pressure with a permissible deviation of ± 2.5 percent shall be maintained for the applicable test duration.

The test pressure (p) shall be calculated as follows from the minimum dimension given in Table 4 as the case may be and corresponding induced stress value given in Table 5.

$$p = \frac{2\sigma_i s}{d - s}$$

Where

p = test pressure, in MPa;

S = minimum wall thickness, in

mm; σ_i = induced stress, in MPa; and

d = outside diameter of pipe, in mm.

E-5 The sample shall not show sign of localized swelling or leakage and shall not burst during the prescribed test duration. The test showing failure within a distance equivalent to the length of end cap from the end shall be disregarded and the test be repeated.

ANNEX F

(Clause 8.2)

LONGITUDINAL REVERSION TEST

F-1 APPARATUS

F-1.1 Air Oven — Thermostatically controlled at $110 \pm 2^\circ\text{C}$ and is capable of re-establishing this temperature within 15 minutes after the introduction of test specimen in the oven.

F-1.2 Thermometer — Graduated to 0.5°C .

F-1.3 Test Specimens — Either 3 complete sections of pipe, approximately 200 mm long shall be taken as test pieces, or where the pipe diameter is greater than 200 mm, pieces of pipe about 200 mm axial length and with an approximate circumferential arc length of 200 mm shall be prepared by cutting. In such cases, the entire circumference of approximately 200 mm long section of pipe shall be divided into pieces measuring approximately 200 mm square. The direction of the pipe axis shall be marked on the pieces. All pieces are required to be tested. A mark shall be scribed on the external surface approximately 50 mm for each end of the test pieces in the axial direction of pipe, (in the case of complete section of pipe, the mark shall be scribed around the whole circumference). The distance between the marks, l_0 (reference length), shall be approximately 100 mm and shall be measured to the nearest 0.25 mm at ambient temperature.

F-2 PROCEDURE

F-2.1 Place the test pieces concave side up on a glass plate previously dusted with talcum, to ensure that changes in length take unimpeded. The pieces shall not touch each other.

F-2.2 Set the oven temperature at $110 \pm 2^\circ\text{C}$. The glass plate with the test pieces shall then be placed in the oven heated to test temperature and capable of maintaining continuous forced air circulation. The test pieces shall be kept in the oven at the temperature and for the periods specified below:

Wall Thickness, e mm	Test Temperature $^\circ\text{C}$	Period of Stressing min
Up to 8	110 ± 2	60 ± 1
Over 8 and up to 16	110 ± 2	120 ± 2
Over 16	110 ± 2	240 ± 5

F-2.3 Remove the test pieces from the oven and allow to cool in air, without being moved, at the ambient temperature. Measure the minimum distance between the two marks.

F-3 EXPRESSION OF RESULTS

F-3.1 For each test pieces calculate the longitudinal reversion, T, as a percentage, as follows:

$$T = \frac{l_0 - l_1}{l_0} \times 100$$

Where

l_0 and l_1 are the distance (reference length) in mm before and after the test.



F-3.2 The average value (arithmetic mean) of all the test pieces shall be obtained and reported.

ANNEX G

(Clause 8.8)

DETERMINATION OF FAILURE MODE OF TEST PIECES FROM A BUTT-FUSED JOINT

G-1 PRINCIPLE OF THE METHOD

A test piece machined from a butt-fused PE pipe joint to give a waisted section is subjected to a tensile stress at constant speed. When loading the test piece in a tensile-testing machine, the stress is concentrated through the jointed region and ultimate failure is in the vicinity of the joint.

The failure mode is used as criteria for the evaluation of the butt-fused joint. The test is carried out at a temperature of $27 \pm 2^\circ\text{C}$.

G-2 APPARATUS

- Room, which can be controlled at a temperature of $27 \pm 2^\circ\text{C}$.
- Tensile-testing machine, capable of sustaining between its clamping jaws a constant speed of 5 ± 1 mm/min, and equipped with means for recording the consequent applied force and a device to detect test piece failure.
- Clamping device, equipped with bars fitting into traction holes machined in the test piece.
- Measuring devices, capable of determining the width and thickness of the test piece to within 0.05 mm.
- Template with the geometry of the test piece (see Fig. 5 and Fig. 6), to mark the shape of the test piece to be machined.

G-3 TEST PIECES

G-3.1

Preparation G-

3.1.1 General

The butt-fused PE pipe joints shall be prepared in accordance with the manufacturer's instructions or the instructions specified in the IS 7634 (Part 2).

For each test piece required, a strip shall be machined out along the longitudinal direction of the pipe, across the joint. The strip shall be further machined to prepare a test piece with dimensions conforming to following using a template to ensure that the joint interface will be aligned with the cross-section of the centre of the waist of the test piece of type A or type B, as applicable:

- Table 11 and Fig. 2 for pipes with wall thickness $e < 25$ mm (Type A);
- Table 11 and Fig. 3 for pipes with wall thickness $e \geq 25$ mm (Type B);

The fusion beads may be removed.

G-3.1.2 Type A Test Piece

The dimension and shape of the Type A test piece shall conform to Fig. 2 and Table 11.

The "waist" of the test piece shall be formed by drilling or machining holes with their centres 35 mm

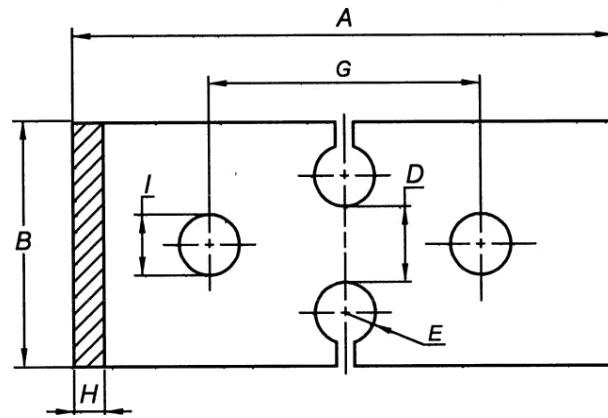


FIG. 2 MACHINED TYPE A TENSILE TEST PIECE
(FOR $E < 25$ mm)

or 45 mm apart, as applicable, so that the centre lines of the holes lie in the same plane as the joint interface, and then cutting towards the holes from the corresponding edge of the strip. The faces of the test piece waist shall be smooth. The finish of the remaining edges is not critical.

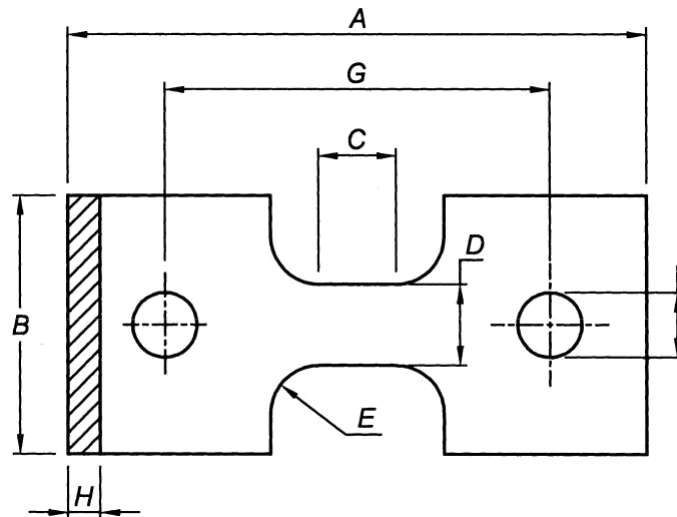


FIG. 3 MACHINE TYPE B TENSILE TEST PIECE (FOR $E \geq 25$ mm)

Table 11 Dimensions of Type A and B Test Pieces(Clause G-3.1.2)

All dimensions in millimetres.

Sl No.	Symbol	Description	Dimension of Type A Test Piece		Dimensions of Type B Test Piece
			$d_n \leq 160$ mm	$d_n > 160$ mm	
(1)	(2)	(3)	(4)	(5)	(6)
i)	A	Overall length, Min	180	180	250
ii)	B	Width at ends	60 ± 3	80 ± 3	100 ± 3
iii)	C	Length of narrow parallel-sided portion	Not Applicable	Not Applicable	25 ± 1
iv)	D	Width of narrow portion	25 ± 1	25 ± 1	25 ± 1
v)	E	Radius	5 ± 0.5	10 ± 0.5	25 ± 0.5
vi)	G	Initial distance between grip	90 ± 5	90 ± 5	165 ± 5
vii)	H	Thickness	Full wall thickness	Full wall thickness	Full wall thickness
viii)	I	Diameter of traction holes	20 ± 5	20 ± 5	30 ± 5

G-3.1.3 Type B Test Piece

The dimension and shape of the Type B test piece shall conform to Fig. 3 and Table 11.

G-3.2 Number of Test Pieces

The number of test pieces shall depend upon the nominal outside diameter d_n of the pipe as given in Table 12.

Table 12 Number of Test Pieces(Clause G-3.2)

Sl No.	Nominal Outside Diameter, d_n mm	Number of Test Pieces
i)	$90 \leq d_n < 110$	2
ii)	$110 \leq d_n < 180$	4
iii)	$180 \leq d_n < 315$	6
iv)	$d_n \geq 315$	7



One test piece shall be taken at the position of maximum misalignment. The other test pieces shall be taken uniformly around the circumference of the joint.

G-4 CONDITIONING

Immediately prior to testing in accordance with G-5, condition each test piece in air for a minimum of 6 h at a temperature of $27 \pm 2^\circ\text{C}$, starting the period of conditioning at a time such that testing will not be carried out less than 24 h after the butt fusion of the joint.

G-5 PROCEDURE

- a) Measure the thickness of the test piece as the thickness of the pipe wall and the width of the test piece as the distance between the two holes drilled at the joint (D) for test pieces of type A (see Table 11 and Fig. 2) or as the width of the narrow portion (D) for test pieces of type B (see Table 11 and Fig. 3).
- b) Place the test piece in the clamping device of the tensile-testing machine, so that the direction of the force applied to the test piece is perpendicular to the butt-fusion joint.
- c) Apply tension to the test piece with a cross-head speed of 5 ± 1 mm/min.
- d) Record the force applied during extension until complete failure of the test piece.
- e) Record the type of failure as ductile or brittle. Only failures at the butt-fusion joint shall be taken into account.

G-6 EXPRESSION OF RESULTS

The sample shall not show brittle failure during the prescribed test. The results of all the test pieces shall be obtained and reported.

ANNEX H

(Clause 8.9 and Table 6)

DETERMINATION OF ELONGATION AT BREAK

H-1 APPARATUS

H-1.1 Tensile-testing machine meeting the specifications given in H-1.2 to H-1.4, as follows:

H-1.2 Grips, for holding the test piece and attached to the machine so that the major axis of the test piece coincides with the direction of pull through the centre line of the assembly. This can be achieved, for example, by using centring pins in the grips.

The test piece shall be held such that slip relative to the grips is prevented as far as possible and this shall be effected with the type of grip that maintains or increases pressure on the test piece as the force applied to the test piece increases.

The clamping system shall not cause premature fracture at the grips.

H-1.3 Load indicator, incorporating a mechanism capable of showing the total tensile load carried by the test piece when held by the grips. The mechanism shall be essentially free from inertia lag at the specified rate of testing, and shall indicate the load with an accuracy of within 1 percent of the actual value.

H-1.4 Extensometer, suitable for determining the gauge length of the test piece at any moment during the test.

The instrument shall be essentially free from inertia lag at the specified test speeds and shall be capable of measuring deformation to an accuracy of within 1 percent. Where a mechanical extensometer is used, this shall be fixed to the test piece in such a way that the test piece undergoes the minimum damage and distortion and no slip occurs between it and the extensometer.

The measurement of elongation of the test piece on the basis of the movement of the grips lacks accuracy and shall be avoided whenever possible.

NOTE — It is desirable, but not essential, for this instrument to record this length, or any variation in it, automatically as a function of the stress in the test piece.

H-1.5 Micrometer or equivalent, capable of reading to 0.01 mm or less and suitable for measuring the thickness and width of the test piece.

H-1.6 Cutting die, conforming to the relevant profile in this standard, as applicable.

H-1.7 Milling machine and cutter, capable of producing the test piece specified in this standard, as applicable.

H-2 TEST PIECES

H-2.1 Nature of Test

Pieces H-2.1.1 General

Where the thickness of the pipe is less than or equal to 12 mm, the test pieces shall be cut using a die or obtained by machining. Where the thickness of the pipes is greater than 12 mm the test pieces shall be machined.

H-2.1.2 Dimensions of Test Pieces

Test pieces shall be either of Type 1, the shape and dimensions of which are given in Fig. 4 and Table 13, Type 2, the shape and dimensions of which are given in Fig. 5 and Table 14 or Type 3, the shape and dimensions of which are given in Fig. 6 and Table 15. The choice of test piece is dependent on the wall thickness of the pipe from which it is taken (see H-2).

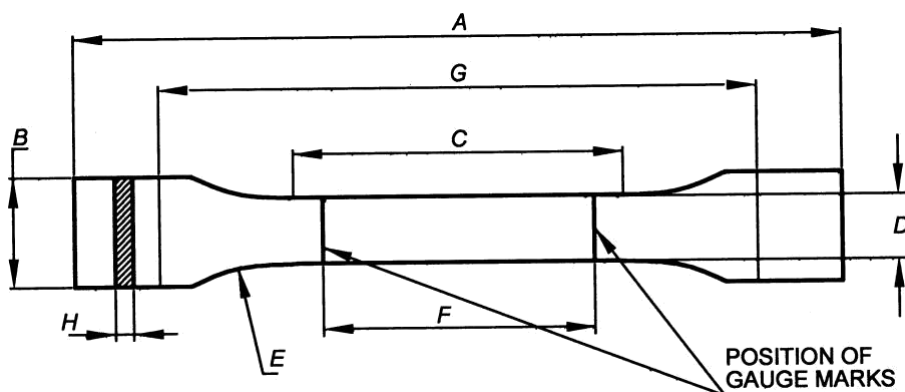


FIG. 4 TYPE 1 TEST PIECE

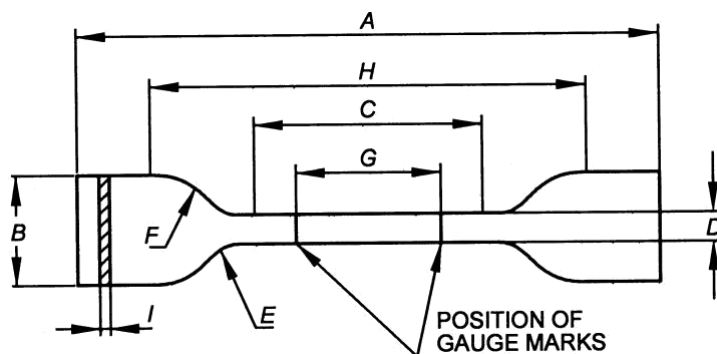


FIG. 5 TYPE 2 TEST PIECE

Table 13 Dimension of Type 1 Test Pieces(Claue H-2.1.2)

SI No.	Symbol	Description	Dimension Mm
(1)	(2)	(3)	(4)
i)	A	Overall length, Min.	150
ii)	B	Width of ends	20 ± 0.2
iii)	C	Length of narrow, parallel-sided portion	60 ± 0.5
iv)	D	Width of narrow, parallel-sided portion	10 ± 0.2
v)	E	Radius	60
vi)	F	Gauge length	50 ± 0.5
vii)	G	Initial distance between grips	115 ± 0.5
viii)	H	Thickness	That of the Pipe

Table 14 Dimension of Type 2 Test Pieces(Claue H-2.1.2)

SI No.	Symbol	Description	Dimension Mm
(1)	(2)	(3)	(4)
i)	A	Overall length, Min	115
ii)	B	Width of ends	25 ± 1
iii)	C	Length of narrow, parallel-sided portion	33 ± 2
iv)	D	Width of narrow, parallel-sided portion	$6 + 0 - 0.4$
v)	E	Small radius	14 ± 1
vi)	F	Large radius	25 ± 2
vii)	G	Gauge length	25 ± 1
viii)	H	Initial distance between grips	80 ± 5
ix)	I	Thickness	That of the Pipe

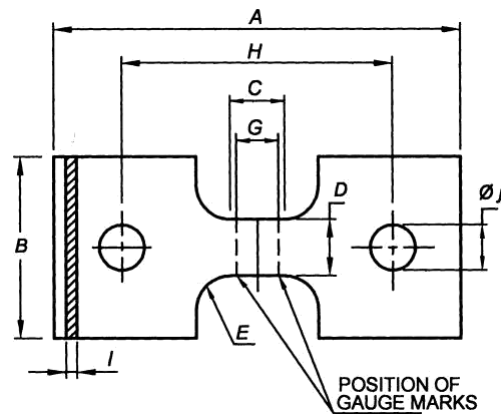


FIG. 6 TYPE 3 TEST PIECE

Table 15 Dimension of Type 3 Test Pieces (Clause H-2.1.2)

SI No.	Symbol	Description	Dimension mm
(1)	(2)	(3)	(4)
i)	A	Overall length (min.)	250
ii)	B	Width of ends	100±3
iii)	C	Length of narrow, parallel-sided portion	25±1
iv)	D	Width of narrow, parallel-sided portion	25±1
v)	E	Radius	25±1
vi)	G	Gauge length	20±1
vii)	H	Initial distance between centres of loading pins	165±5
(viii)	I	Thickness	That of the pipe
ix)	J	Diameter of hole	30±5

H-2.2 Preparation of Test Pieces

Cut strips from the pipe as supplied, that is which has not been heated or flattened, so that their axis is parallel to the axis of the pipe and the positions from which the strips are taken conform to item (a) or item (b) below, as applicable:

- a) Pipes of nominal outside diameter less than or equal to 63 mm Use lengths of pipe of approximately 150 mm
Cut strips from these various lengths, distributing them around the circumference from a generating line taken as the reference line
Unless otherwise specified, cut at least three strips from each sample so as to be able to take three test pieces (see Table 16).

Table 16 Recommended Number of Test Pieces [Clause H-2.2 (a)]

SI No.	Nominal Outside Diameter, d_n mm	Number of Sectors or Strips
(1)	(2)	(3)
i)	$15 \leq d_n < 75$	3
ii)	$75 \leq d_n < 280$	5
iii)	$280 \leq d_n < 450$	5
iv)	$d_n \geq 450$	8

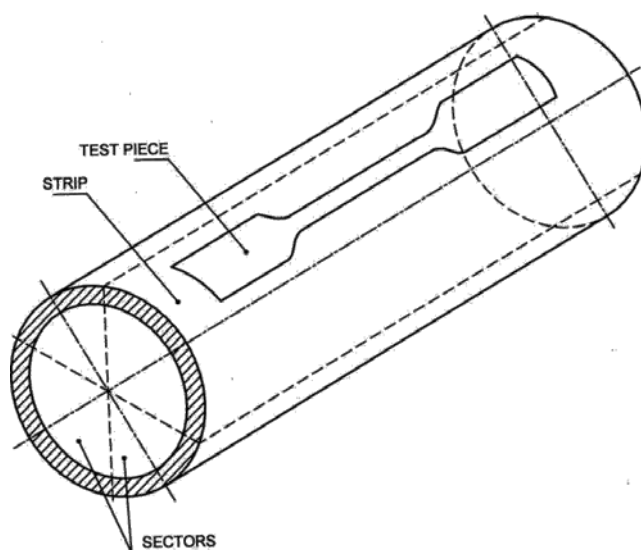


FIG. 7 PREPARATION OF TEST PIECES

- b) Pipes of nominal outside diameter greater than 63 mm Use a length of pipe of approximately 150 mm.

Cut strips from the length in such a way that they are equally distributed around the circumference of the pipe as shown in Fig. 7.

Unless otherwise specified, divide the circumference of the pipe length into a number of sectors, depending on the diameter of the pipe as given in Table 16. Cut out one test piece per strip.

H-2.2.2 Selection of Test Pieces

The test pieces shall be taken from the centre of strips cut from the length of pipe in accordance with H-2.2.1 and with item (a) or item (b) below, as applicable.

- a) Pipes of wall thickness less than or equal to 12 mm

The test pieces shall be prepared by cutting with a die or machining to the following shape:

- type 1, for wall thicknesses less than or equal to 12 mm but greater than 5 mm;
- type 2, for wall thicknesses less than or equal to 5 mm.

- b) Pipes of wall thickness greater than 12 mm

Test pieces shall be prepared by machining. They shall be of type 1 or type 3.

H-2.3 Cutting Method

Use the cutting die (H-1.6) clean cutting edges, free from notches with a profile corresponding to that of the type 1 or type 2 test piece, depending on the thickness of the pipe.

Cut out the test piece at ambient temperature, applying the die cutter to the inner surface of the strip and exerting a continuous uniform pressure.

H-2.4 Machining Method

Produce the specimen by milling, where necessary using a milling jig.



The shape of the milling cutter and the machining conditions (speed of rotation and advance) are at the discretion of the operator. They shall however be chosen so as to avoid any heating of the test piece and deterioration of its surface such as cracks, scratches or other visible flaws.

H-3 CONDITIONING

Prior to testing, condition the test pieces at a temperature of $(27 \pm 2) ^\circ\text{C}$ for a period of not less than the time specified in Table 17, according to the thickness of the test piece.

Table 17 Conditioning
Periods (Clause H-3)

Sl No. (1)	e_{Min} mm (2)	Conditioning Period (3)
i)	$e_{\text{Min}} < 3$	1 h \pm 5 min
ii)	$3 \leq e_{\text{Min}} < 8$	3 h \pm 15 min
iii)	$8 \leq e_{\text{Min}} < 16$	6 h \pm 30 min
iv)	$16 \leq e_{\text{Min}} < 32$	10 h \pm 1 h
v)	$32 \leq e_{\text{Min}}$	16 h \pm 1 h 30 min

The test pieces shall not be tested within a period of 15 h after the production of the pipes, except for manufacturing checks, unless otherwise specified in the referring standard.

H-4 TEST SPEED

The test speed, that is the speed of separation of the grips, shall depend on the thickness of the pipes, as specified in Table 18.

Table 18 Test
Speed (Clause H-4)

Sl No. (1)	Nominal Wall Thickness of Pipe, e_n mm (2)	Method of Preparation of Test Piece (3)	Type of Test Piece (4)	Test Speed mm/min (5)
i)	$e_n \leq 5$	Die cutting or machining	Type 2	100
ii)	$5 < e_n \leq 12$	Die cutting or machining	Type 1	50
iii)	$e_n > 12$	Machining	Type 1	25
iv)	$e_n > 12$	Machining	Type 3	10

H-5 PROCEDURE

Carry out the following procedure at a temperature of $(27 \pm 2) ^\circ\text{C}$.

- Measure, to within 0.01 mm, the width and minimum thickness of the central part of the test piece between the gauge marks. Calculate the minimum cross-sectional area.
- Place the test piece in the tensile-testing machine in such a way that the axis of the test piece coincides more or less with the direction of the tensile force. Clamp the grips uniformly and tightly to avoid any slippage of the test piece.
- Adjust the test speed to the value specified and set the machine in motion.
- Record the stress/strain curve up to the rupture of the test piece and record on this curve the gauge length at rupture, or note directly the value of the gauge length after rupture.

Discard any test pieces which slip in the grips, those which break at one of the shoulders and those which deform, thus changing the width of the shoulders, and retest an identical number of test pieces.

H-6 EXPRESSION OF RESULTS

Calculate, for each test piece, the elongation at break, using the following formula:

$$E = \frac{L_1 - L_0}{100L_0} \times$$

Where

E = elongation at break expressed as a percentage;

L_0 = initial gauge length of the test piece, expressed in mm; and L_1 = length at break, expressed in mm.

The above average value (arithmetic mean) of all the test pieces shall be obtained and reported.

ANNEX J

(Clause 8.10)

METHOD OF PREPARATION OF LONGITUDINALLY NOTCHED TEST PIECES FOR SLOW CRACK GROWTH RATE TEST

J-1 APPARATUS

The apparatus shall consist of a milling machine having a horizontal mandrel rigidly fixed to the bed to enable a pipe to be securely clamped to give a straight specimen. The mandrel shall support the pipebore beneath and along the full length of the notch to be machined.

The milling cutter, mounted on a horizontal arbor, shall be a 60° included angle 'v' cutter, 12.5 mm wide having a cutting rate of 0.010 ± 0.002 mm/rev/tooth, for example a cutter with 20 teeth rotating at 700 rev/min traversed along at a speed of 150 mm/min has a cutting rate of $[150 / (20 \times 700)] = 0.011$ mm/rev/tooth. The milling cutter shall be carefully protected against damage. It shall not be used for any other material or purpose and shall be replaced after 100 m of notching.

J-2 TEST PIECE

A sample of pipe having free length between the end fittings equal to 10 times the outside diameter but neither less than 250 mm nor greater than 750 mm shall be taken for testing from each pipe to be tested.

J-3 PROCEDURE

J-3.1 The minimum pipe wall thickness shall be located and marked for machining an initial notch. The positions shall be marked for machining three additional notches equally spaced around the pipe circumference at the same position along the specimen as the initial notch.

J-3.2 The average minimum wall thickness shall be determined from measurements taken at either end of the specimen in line with a position of the initial notch.

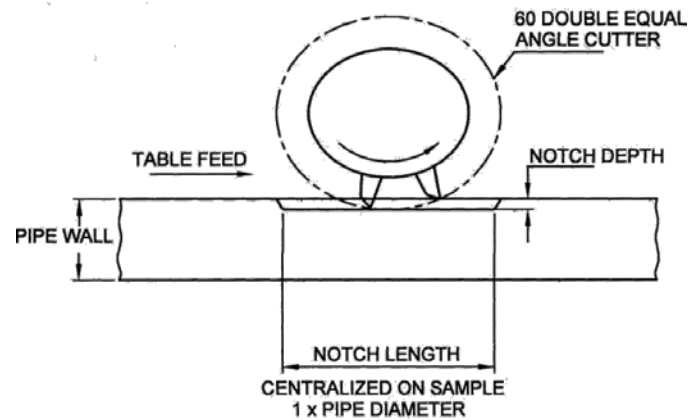
J-3.3 For pipes having a wall thickness greater than 50 mm, the notch shall initially be machined with a slot drill of 15 mm to 20 mm diameter to leave approximately 10 mm to be removed by the 'v' cutter when machining in accordance with J-3.4 or J-3.5.

J-3.4 The initial notch (see J-3.1) shall be machined by climb milling to depth so as to produce a pipe wall ligament of thickness between 0.78 and 0.82 times the minimum specified wall thickness of the pipe (see Fig. 8).

NOTE — To achieve a remaining ligament within the required tolerance range, it is advisable to aim for a remaining ligament at the top of the tolerance range. This is because the pipe wall can move due to release of residual stresses, resulting in a deeper than anticipated notch.

The length of the notch, at full depth, shall be equal to the pipe outside diameter ± 1 mm.

J-3.5 An additional notch shall be machined at each of the three positions marked in accordance with J-3.1 so that each notch has an identical ligament thickness to that of the initial notch and the ends of each notch are aligned circumferentially with those of the



initial notch as shown in Fig. 8 and Fig. 9.

FIG. 8 NOTCH METHOD

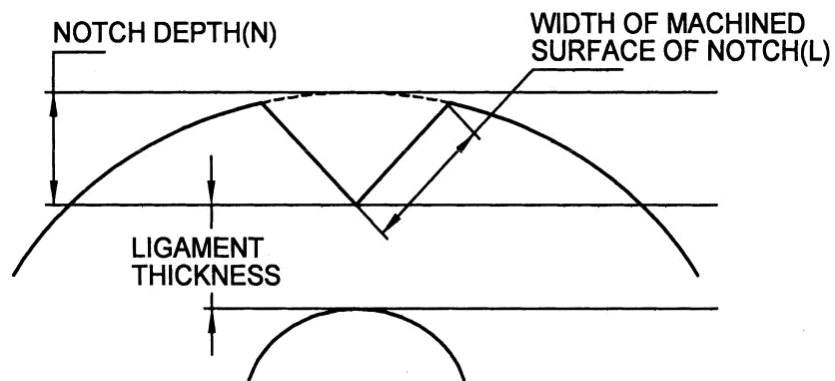


FIG. 9 MEASUREMENT TO CALCULATE NOTCH DEPTH

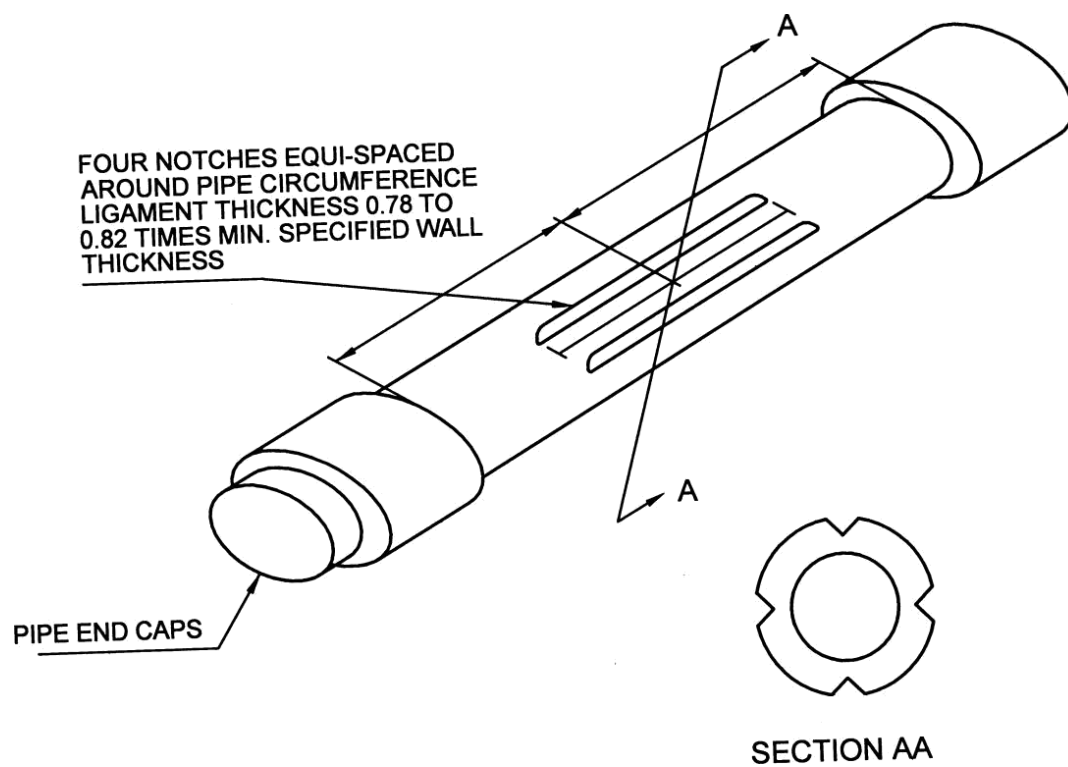


FIG. 10 PIPE TEST PIECE

J-4 MEASUREMENT OF NOTCH DEPTH

On completion of the pressure test, the test piece shall be removed from the water tank and allowed to cool to 27 ± 2 °C. A section of pipe shall be cut out from around the position of each notch.

The notch shall be opened up to give clear access to one of the machined surfaces of the notch. The width L

(mm) of the machined surface of the notch shall be measured to an accuracy of ± 0.1 mm with a microscope or other suitable means as shown in Fig. 10.

The notch depth N (mm) shall be calculated from the equation.

$$N = 0.5 [d_{em} - (d_{em}^2 - L^2)^{1/2}] + 0.86 L$$

Where

d_{em} = measured mean pipe outside diameter, in mm; and L = width of machined surface of notch, in mm.

The ligament thickness shall be calculated from the notch depth. For acceptance, each notch shall be in accordance with J-3.4.

4. Drawings

The purpose of drawings is to specify locations, dimensions, materials to be used, stages of manufacturing, and other characteristics of the Goods and Related Services. The Purchaser should prepare such drawings, as needed, and include them in the Procurement Document. Such drawings, as part of the SR, are Contract documents and, therefore, shall be part of the Contract. Similarly, the Purchaser may request the Supplier to provide drawings either with its Bid or for approval during Contract execution.

It is essential that the Purchaser prepares a **List of Drawings** showing all drawings it supplied and issued as part of the Procurement Document.

Section VI. General Conditions of Contract

Table of Clauses

1. Definitions	58
2. Contract Documents	59
3. Fraud and Corruption	59
4. Interpretation	60
5. Language	61
6. Joint Venture, Consortium or Association	61
7. Notices	62
8. Governing Law	62
9. Settlement of Disputes.....	62
10. Scope of Supply.....	62
11. Delivery	62
12. Supplier's Responsibilities.....	62
13. Purchaser's Responsibilities	63
14. Contract Price	63
15. Terms of Payment.....	63
16. Taxes and Duties	63
17. Performance Security	63
18. Copyright.....	64
19. Confidential Information	64
20. Subcontracting	65
21. Specifications and Standards.....	65
22. Packing and Documents	66
23. Insurance.....	66
24. Transportation.....	66
25. Inspections and Tests.....	66
26. Liquidated Damages	68
27. Warranty	68
28. Patent Indemnity.....	69
29. Limitation of Liability	70
30. Change in Laws and Regulations	70
31. Force Majeure.....	70
32. Change Orders and Contract Amendments	71
33. Extensions of Time.....	72
34. Termination	72
35. Assignment	74



Section VI. General Conditions of Contract

1. Definitions

1.1. The following words and expressions shall have the meanings hereby assigned to them:

- (a) “Contract” means the Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
- (b) “Contract Documents” means the documents listed in the Agreement, including any amendments thereto.
- (c) “Contract Price” means the price payable to the Supplier as specified in the Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.
- (d) “Day” means calendar day.
- (e) “Delivery” means the transfer of the Goods from the Supplier to the Purchaser in accordance with the terms and conditions set forth in the Contract.
- (f) “Completion” means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- (g) “GCC” means the General Conditions of Contract.
- (h) “Goods” means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- (i) “Purchaser’s Country” is the country specified in the Special Conditions of Contract (SCC).
- (j) “Purchaser” means the entity purchasing the Goods and Related Services, as specified in the SCC.
- (k) “Related Services” means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other similar obligations of the Supplier under the Contract.
- (l) “SCC” means the Special Conditions of Contract.

- (m) “Subcontractor” means any natural person, private or government entity, or a combination of the above, including its legal successors or permitted assigns, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.
- (n) “Supplier” means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Agreement, and includes the legal successors or permitted assigns of the Supplier.
- (o) “GoN” means the Government of Nepal.
- (p) “The Site,” where applicable, means the place named in the SCC.

2. Contract Documents

2.3 Subject to the order of precedence set forth in the Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory.

3. Fraud and Corruption

3.1 If the Purchaser determines that the Supplier has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Purchaser may, after giving 14 days notice to the Supplier, terminate the Supplier's employment under the Contract and the provisions of GCC Clause 34.1 shall apply.

For the purposes of this Sub-Clause:

- (i) “corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- (ii) “fraudulent practice”² is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (iii) “collusive practice”³ is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

² a “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

³ “parties” refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non competitive levels.



(iv) “coercive practice”⁴ is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a GoN/Provincial Government/DP investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

(bb) acts intended to materially impede the exercise of the GoN/Provincial Government/DP’s inspection and audit rights provided for under ITB Clause 3.5 and GCC Clause 25.

3.2 Without prejudice to any other rights of the Purchaser under this Contract, GoN/Provincial Government may **blacklist** a Bidder/Supplier for its conduct for a period of one (1) to three (3) years on the following grounds and seriousness of the act committed by the bidder:

(a) if it is established that the Supplier committed acts specified in ITB 3.2,

(b) if it is established later that the Bidder has committed substantial defect in implementation of the contract or has not substantially fulfilled its obligations under the contract or the completed work is not of the specified quality as per the contract.

4. Interpretation

4.1 If the context so requires it, singular means plural and vice versa.

4.2 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.

⁴ a “party” refers to a participant in the procurement process or contract execution.

4.3 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.4 Nonwaiver

- (a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.
- (b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.5 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

- 5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language specified in the SCC. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the SCC, in which case, for purposes of interpretation of the Contract, this translation shall govern.
- 5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

6. Joint Venture, Consortium or Association

- 6.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or



association. A bidder can submit only one bid either as a partner of the joint venture or individually. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

6.2 **The contractor shall not handover the responsibility of the contract to any one member or some members of Joint Venture or any other parties, not involved in the contract.**

7. Notices

7.1 Any Notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the SCC. The term “in writing” means communicated in written form with proof of receipt.

7.2 A Notice shall be effective when delivered or on the Notice’s effective date, whichever is later.

8. Governing Law

8.1 The Contract shall be governed by and interpreted in accordance with the laws of Nepal.

9. Settlement of Disputes

9.1 The Purchaser and the Supplier shall make every effort to settle amicably by direct negotiation any disagreement or dispute arising between them under or in connection with the Contract.

9.2 Any dispute between the Parties as to matters arising pursuant to this Contract which cannot be settled amicably within thirty (30) days after receipt by one Party of the other Party’s request for such amicable settlement may be referred to Arbitration within 30 days after the expiration of amicable settlement period as specified in SCC.

10. Scope of Supply

10.1 Subject to the SCC, the Goods and Related Services to be supplied shall be as specified in Section V, Schedule of Requirements.

10.2 Unless otherwise stipulated in the Contract, the Scope of Supply shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Delivery and Completion of the Goods and Related Services as if such items were expressly mentioned in the Contract.

11. Delivery

11.1 Subject to GCC Sub-Clause 31.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Section V, Schedule of Requirements. The details of documents to be furnished by the Supplier are specified in the

SCC.

12. Supplier's Responsibilities

12.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 10, and the Delivery and Completion Schedule, as per GCC Clause 11.

13. Purchaser's Responsibilities

13.1 Whenever the supply of Goods and Related Services requires that the Supplier obtain permits, approvals, and import and other licenses from public authorities in Nepal, the Purchaser shall, if so required by the Supplier, make its best effort to assist the Supplier in complying with such requirements in a timely and expeditious manner.

13.2 The Purchaser shall pay all costs involved in the performance of its responsibilities, in accordance with GCC Sub-Clause 13.1.

14. Contract Price

14.1 The Contract Price shall be as specified in the Agreement subject to any additions and adjustments thereto, or deductions there from, as may be made pursuant to the Contract.

14.2 Prices charged by the Supplier for the Goods delivered and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in the SCC.

15. Terms of Payment

15.1 The Contract Price shall be paid in Nepalese Currency.

15.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 11 and upon fulfillment of all the obligations stipulated in the Contract.

15.3 Payments shall be made promptly by the Purchaser, no later than thirty (30) days after submission of an invoice or request for payment by the Supplier, and the Purchaser has accepted it.

16. Taxes and Duties

16.1 For goods supplied, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser

17. Performance Security

17.1 The Supplier shall, within fifteen (15) days of the receipt of notification of Contract award, provide a Performance Security for the due performance of the Contract in the



amounts and currencies specified in the SCC.

- 17.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 17.3 The Performance Security shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Purchaser, and shall be in one of the forms stipulated by the Purchaser in the SCC, or in another form acceptable to the Purchaser.
- 17.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless specified otherwise in the SCC.

18. Copyright

- 18.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

19. Confidential Information

- 19.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 19.
- 19.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the Contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the design, procurement, or other work and services required for the performance of the

Contract.

19.3 The obligation of a party under GCC Sub-Clauses 19.1 and 19.2 above, however, shall not apply to information that:

- (a) the Purchaser or Supplier need to share with the Donor for Donor funded project or other institutions participating in the financing of the Contract;
- (b) now or hereafter enters the public domain through no fault of that party;
- (c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or
- (d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

19.4 The above provisions of GCC Clause 19 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

19.5 The provisions of GCC Clause 19 shall survive completion or termination, for whatever reason, of the Contract.

20. Subcontracting

20.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the Bid. Subcontracting shall in no event relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.

20.2 Subcontracts shall comply with the provisions of GCC Clauses 3.

21. Specifications and Standards

21.1 Technical Specifications and Drawings

- (a) The Supplier shall ensure that the Goods and Related Services comply with the technical specifications and other provisions of the Contract.
- (b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.
- (c) The Goods and Related Services supplied under this



Contract shall conform to the standards mentioned in Section V, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the country of origin of the Goods.

21.2 Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Section V, Schedule of Requirements Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 32.

22. Packing and Documents

22.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination of the Goods and the absence of heavy handling facilities at all points in transit.

22.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the SCC, and in any other instructions ordered by the Purchaser.

23. Insurance

23.1 Unless otherwise specified in the SCC, the Goods supplied under the Contract shall be fully insured, in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in the manner specified in the SCC.

24. Transportation

24.1 Unless otherwise specified in the SCC, obligations for transportation of the Goods shall be in accordance with the Incoterms specified in Sections V, Schedule of Requirements.

25. Inspections and Tests

25.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in Sections V, Schedule of Requirements.

25.2 The inspections and tests may be conducted on the premises

of the Supplier or its Subcontractor, at point of delivery, and/or at the final destination of the Goods, or in another place in Nepal as specified in the SCC. Subject to GCC Sub-Clause 25.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.

25.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 25.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

25.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

25.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications, codes and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impede the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.

25.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

25.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 25.4.

25.8 The Supplier agrees that neither the execution of a test



and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 25.6, shall release the Supplier from any warranties or other obligations under the Contract.

26. Liquidated Damages

26.1 Except as provided under GCC Clause 31, if the Supplier fails to deliver any or all of the Goods or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the SCC of the Contract Price for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in the SCC. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 34.

27. Warranty

27.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

27.2 Subject to GCC Sub-Clause 21.1, the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in Nepal.

27.3 Unless otherwise specified in the SCC, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC.

27.4 The Purchaser shall give Notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

27.5 Upon receipt of such Notice, the Supplier shall, within the period specified in the SCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

27.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the SCC, the Purchaser may proceed to take within a reasonable period such

remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

28. Patent Indemnity

28.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 28.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

- (a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and
- (b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

28.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 28.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

28.3 If the Supplier fails to notify the Purchaser within thirty (30) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

28.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such



proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

28.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

29. Limitation of Liability

29.1 Except in cases of gross negligence or willful misconduct :

- (a) neither party shall be liable to the other party for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and
- (b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort, or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Supplier to indemnify the Purchaser with respect to patent infringement.

30. Change in Laws and Regulations

30.1 Unless otherwise specified in the Contract, if after the date of the Invitation for Bids, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in Nepal where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where

applicable, in accordance with GCC Clause 14.

31. Force Majeure

- 31.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 31.2 For purposes of this Clause, “Force Majeure” means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
- 31.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

32. Change Orders and Contract Amendments

- 32.1 The Purchaser may at any time order the Supplier through Notice in accordance GCC Clause 7, to make changes within the general scope of the Contract in any one or more of the following:
- (a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
 - (b) the method of shipment or packing;
 - (c) the place of delivery; and
 - (d) the Related Services to be provided by the Supplier.
- 32.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier’s performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery and Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within thirty (30) days from the date of the Supplier’s receipt of the Purchaser’s change order.

32.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

33. Extensions of Time

33.1 If at any time during performance of the Contract, the Supplier or its Subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 11, the Supplier shall promptly, and **at least twenty one (21) days** before the expiry of procurement contract, notify the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

33.2 Except in case of Force Majeure, as provided under GCC Clause 31, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 26, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

34. Termination

34.1 Termination for Default

- (a) The Purchaser, without prejudice to any other remedy for breach of Contract, by Notice of default sent to the Supplier, may terminate the Contract in whole or in part:
 - (i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 33; or
 - (ii) if the Supplier fails to perform any other obligation under the Contract.
 - (iii) The supplier uses the advance payment for matters other than the contractual obligations.
 - (iv) The purchaser may terminate the contract at any time in the following condition incase contract is terminated.supplier shall obliged to pay whole amount of remaining work or supply or fulfill the any Supplier obligation.

- (a) does not commence the work as per the contract,
 - (b) abandons the contract with out completing,
 - (c) fails to achieve progress as per the contract.
- (b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 34.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.
- (c) if the Supplier, in the judgment of the Purchaser has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, as defined in GCC Clause 3, in competing for or in executing the Contract.

34.2 Termination for Insolvency

The Purchaser may at any time terminate the Contract by giving Notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser.

34.3 Termination for Convenience

- (a) The Purchaser, by written Notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The Notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.
- (b) The Goods that are complete and ready for shipment within seven (7) days after the Supplier's receipt of the Notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:
 - (i) To have any portion completed and delivered at

the Contract terms and prices; and/or

- (ii) To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

35. Assignment

35.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

Section VII. Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC 1.1(i)	The Purchaser's country is: Nepal
GCC 1.1(j)	The Purchaser is: Water Supply and Sanitation Office, Tansen Palpa
GCC 1.1 (p)	The Site is: As mentioned in Section V. Schedule of Requirements-Delivery and Completion Schedule
GCC 5.1	The language shall be: Nepali or English
GCC 7.1	For <u>notices</u> , the Purchaser's address shall be: Name and Address of the Purchaser: Water Supply and Sanitation Office, Tansen Palpa Telephone number: 075-520007 e-mail Address: wssso.palpa@gmail.com
	For <u>notices</u> , the Suppliers's address shall be: <u>[insert full name and address of Suppliers including telephone number, facsimile number and electronic mail address (if applicable)]</u> Name and Address of the Supplier: Telephone number: Facsimile number: e-mail Address:
GCC 9.2	In case of arbitration, the arbitration shall be conducted in accordance with the arbitration procedures published by the Nepal Council of Arbitration (NEPCA) at [Insert place]
GCC 10.1	The Scope of Supply shall be defined in: <i>"Section V, Schedule of Requirements". At the time of awarding the Contract, the Purchaser shall specify any change in the Scope of Supply with respect to Section V, Schedule of Requirements included in the Bidding Document. Such changes may be due, for instance, if the quantities of Goods and Related Services are increased or decreased at the time of award.</i>
GCC 11.1	Upon delivery of the Goods to the transporter, the Supplier shall

	<p>notify the Purchaser and send the following documents to the Purchaser:</p> <ul style="list-style-type: none"> a) Copies of the Supplier's invoice showing the description of the Goods, quantity, unit price, and total amount; b) Copy of packing list indentifying the contents of each package; c) Delivery note, railway receipt, or truck receipt; d) Manufacturer's or Supplier's warranty certificate; e) Certificate of origin; and f) Inspection certificate issued by the nominated inspection agency, and the Supplier's factory inspection report; <p>The Purchaser shall receive the above documents before the arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.</p> <p>[Note: The above requirements should be reviewed on a case-by-case basis, with amendments being made as necessary]</p>
GCC 14.2	<p>The prices charged for the Goods delivered and the Related Services to be performed shall be fixed for the duration of the contract. or</p> <p>The prices charged for the Goods delivered and Related Services to be performed shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labor and material components in accordance with the formula:</p> $\Delta P = P_0 \left(a + b \frac{L_1}{L_0} + c \frac{M_1}{M_0} \right) - P_0$ <p>in which:</p> <p>ΔP = adjustment amount payable to the Supplier.</p> <p>P_0 = Contract Price (base price).</p> <p>a = fixed element representing profits and overheads included in the Contract Price and generally in the range of five (5) to fifteen (15) percent.</p> <p>b = estimated percentage of labor component in the Contract Price.</p> <p>c = estimated percentage of material component in the</p>

	<p style="text-align: center;">Contract Price.</p> <p>L0, L1 = labor indices applicable to the appropriate industry in the country of origin on the base date and date for adjustment, respectively.</p> <p>M0, M1 = material indices for the major raw material on the base date and date for adjustment, respectively, in the country of origin.</p> <p>The coefficients a, b, and c shall be specified by the Purchaser in the bidding document. The sum of the three coefficients should be one (1) in every application of the formula.</p> <p>The Bidder shall indicate in its Bid, the source of the indices and the base dates for such indices.</p> <p>Base date = thirty (30) days prior to the deadline for submission of the Bids.</p> <p>Date of adjustment =weeks prior to date of shipment (representing the mid-point of the period of manufacture).</p> <p>The above price adjustment formula shall be invoked by either party subject to the following further conditions:</p> <ul style="list-style-type: none"> a) Price adjustment will be applied only if the resulting increase or decrease is more than ____ percent of the Contract Price. (2 percent would be an acceptable percentage.) b) No price adjustment shall be allowed beyond the original delivery dates unless specifically stated in the extension letter. As a rule, no price adjustment shall be allowed for periods of delay for which the Supplier is entirely responsible. The Purchaser will, however, be entitled to any decrease in the prices of the Goods and Related Services subject to adjustment. c) If the currency in which the Contract Price (P0) is expressed is different from the currency of origin of the labor and material indices, a correction factor will be applied to avoid incorrect adjustments of the Contract Price. The correction factor shall correspond to the ratio of exchange rates between the two currencies on the base date and the date for adjustment as defined above. d) No price adjustment shall be payable on the portion of the Contract Price paid to the Supplier as advance payment.] e) [The maximum amount of price adjustment to be made pursuant to this clause shall not generally be more than
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	<p>twenty five (25) percent of the initial contract prices.]</p> <p>[Note: Delete as appropriate.]</p>
GCC 15.1	<p>The terms of payment to be made to the Supplier under the contract shall be as follows:</p> <p>1. The payment shall be made: Through WSSO, Tansen Palpa based on quality of pipe supplied</p>
GCC 15.1	<p>2. Payments shall be made in Nepalese Rupees in the following manner:</p> <p>On Delivery and acceptance: One Hundred (100)] percent. of the Contract Price of the Goods and related services delivered shall be paid within thirty (30) days of receipt of the Goods and related services and upon submission of a claim supported by the documents specified in GCC 11.1</p>
GCC 17.1	<p>The Supplier shall provide a Performance Security as follows:</p> <p>I. If bid price of the bidder selected for acceptance is up to 15 (fifteen) percent less than the approved cost estimate, the performance security amount shall be 5 (five) percent of the bid price.</p> <p>II. For the bid price of the bidder selected for acceptance is more than 15 (fifteen) percent below of the cost estimate, the performance security amount shall be determined as follows:</p> <p>Performance Security Amount = [(0.85 x Cost Estimate – Bid Price) x 0.5] + 5% of Bid Price.</p> <p>The Bid Price and Cost Estimate shall be inclusive of Value Added Tax.</p> <p>The amount of the Performance Security shall be in Nepalese Rupees, and shall be valid for the period of[insert the period of validity of performance security]</p> <p>The performance security shall be forfeited, in case the Supplier fails to complete the contractual obligation and rectify the defects within warranty period.</p>
GCC 17.3	<p>The types of acceptable Performance Securities are: A bank guarantee issued by Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law located in Nepal or reputable bank located abroad, acceptable to the Purchaser, in the format included in Section VIII, Contract Forms, Performance Security issued by foreign Bank must be counter – guaranteed by Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.</p>

GCC 17.4	<p>Discharge of the Performance Security shall take place: <i>[insert (a) in accordance with GCC Sub-Clause 17.4; or (b) indicate how the Performance Security shall be discharged]</i></p> <p><i>[For example insert: “Pursuant to GCC Sub-Clause 17.4, after delivery and acceptance of the Goods, the performance security shall be reduced to (specify percentage figure, i.e. 3) percent of the Contract to cover the Supplier’s warranty obligations in accordance with GCC Clause 27.3.”]</i></p>
GCC 22.2	<p>A complete packing list indicating the content of each package shall be enclosed in a water proof envelope and shall be secured to the outside of the packing case. In addition, each package shall be marked with indelible ink/paint in bold letters, as follows:</p> <ol style="list-style-type: none"> Contract number : Name and address of the Purchaser: Country of origin, Gross weight Net weight Package number of total number of packages Brief description of content [Insert any other additional marking] <p>Upright markings, where appropriate, shall be placed on all four vertical sides of the package.</p> <p>All materials used for packing shall be environmentally neutral.</p> <p>[Note: The above requirements should be reviewed on a case-by-case basis, with amendments being made as necessary]</p>
GCC 23.1	<p>The insurance coverage shall be in an amount equal to 110 percent of the contract price of the Goods on “All Risks” basis, including War Risks, riots and/or Strikes.</p>
GCC 24.1	<p>Obligations for transportation of the Goods shall be in accordance with:</p> <p><i>[indicate whether the responsibility for transportation shall be in accordance with Incoterms or other trade terms, such as “The supplier is required under the contract to transport the Goods to a specified place of final destination, defined as the project site, transport to such place of destination including insurance and storage, as shall be specified in the contract, shall be arranged by the supplier, and related costs shall be included in the contract price.”]</i></p>

GCC 25.2	<p>Tests and Inspections specified in Section V, Schedule of Requirements, shall be carried out at the following times or milestones, and places: [Depending on the type of Goods to be procured, there may be a need to provide for special inspections and/or tests to be carried out. In particular, this will be the case when the Goods are designed specifically for the purpose of the Project in question or where due to the nature of the Goods, there is a need to ensure compliance with certain technical specifications and requirements at an early stage. If there is a need for such special inspections and/or tests, the SSC should mention specific testing methods and the timing or milestones and places where the tests and/or inspections are to be carried out. For example insert for each test:</p> <p>Goods: _____</p> <p>Type of Test: _____</p> <p>Time or Milestone: _____</p> <p>Place: _____</p> <p>Address: _____</p> <p>Country: _____</p>
GCC 26.1	<p>The applicable rate of liquidated damages shall be: <u>[0.05 percent of the Contract Price per day.]</u></p>
GCC 26.1	<p>The maximum amount of liquidated damages shall be: <i>ten (10) percent of the Contract Price.</i></p> <p>The contract shall be terminated, if liquidated damages exceeds 10 percent of the Contract Price and blacklisting process shall be initiated for the Supplier's failure to complete the contractual obligations.</p>
GCC 27.3	<p>The period of validity of the Warranty shall be: <i>12 months from Delivered Date</i></p> <p>For the purposes of the Warranty, the place of final destination shall be: WSSO, Palpa</p>
GCC 27.5	<p>The Supplier shall correct any defects covered by the Warranty within: <u>[insert period, i.e. number of days which should not be more than half of the Contract period]</u> of being notified by the Purchaser of the occurrence of such defects</p>



Section VIII. Contract Forms

Table of Forms

Letter of Intent	83
Letter of Acceptance.....	84
Agreement Form	85
Performance Security	86
Advance Payment Security	87



Letter of Intent

[on letterhead paper of the Purchaser]

..... date.

Notes on Letter of Intent

The issuance of Letter of Intent is the information of the selection of the bid of the successful bidder by the Purchaser and for providing information to other unsuccessful bidders who participated in the bid as regards to the outcome of the procurement process. This standard form of Letter of Intent to Award should be filled in and sent to the successful Bidder only after evaluation and selection of substantially responsible lowest evaluated bid.

To: name and address of the Supplier

Subject: Issuance of letter of intent to award the contract

This is to notify you that, it is our intention to award the contract. for execution of the*name of the contract and identification number, as given in the Contract Data/SCC* to you as your bid price
...*amount in figures and words in Nepalese Rupees* as corrected and modified in accordance with the Instructions to Bidders is hereby selected as substantially responsive lowest evaluated bid.

Authorized Signature:

Name:

Title:

CC:

[Insert name and address of all other Bidders, who submitted the bid]



Letter of Acceptance

[on letterhead paper of the Purchaser]

..... date.

To: name and address of the Supplier

Subject: .Notification of Award

This is to notify that your Bid dated date for execution of thename of the contract and identification number, as given in the Contract Data/SCC for the Contract price of Nepalese Rupees [insert amount in figures and words in Nepalese Rupees], as corrected in accordance with the Instructions to Bidders is hereby accepted in accordance with the Instruction to Bidders.

You are hereby instructed to contract this office to sign the formal contract agreement within 15 days. As per the Conditions of Contract, you are also required to submit Performance Security, as specified in SCC, consisting of a Bank Guarantee in the format included in Section VIII (Contract Forms) of the Bidding Document.

The amount of performance security shall be NRs.....[Insert amount] and validity period of performance security shall be[insert validity period].

The Purchaser shall forfeit the bid security, in case you fail to furnish the Performance Security and to sign the contract within specified period.

Authorized Signature:

Name and Title of Signatory:



Agreement Form

THIS AGREEMENT made on the *[insert number]* day of *[insert month]*, *[insert year]*, between *[insert complete name of Purchaser]* of *[insert complete address of Purchaser]* (hereinafter “the Purchaser”), of the one part, and *[insert complete name of Supplier]* of *[insert complete address of Supplier]* (hereinafter “the Supplier”), of the other part:

WHEREAS the Purchaser invited Bids for certain Goods and Related Services, viz., *[insert brief description of the Goods and Related Services]* and has accepted a Bid by the Supplier for the supply of those Goods and Related Services in the sum of NRs*[insert amount of contract price in words and figures including taxes]* (hereinafter “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) the Purchaser’s Notification to the Supplier of Award of Contract;
 - (b) the Bid Submission Form and the Price Schedules submitted by the Supplier;
 - (c) the Special Conditions of Contract;
 - (d) the General Conditions of Contract;
 - (e) the Schedule of Requirements; and
 - (f) *[indicate any other documents required as appropriate]*

This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

3. In consideration of the payments to be made by the Purchaser to the Supplier as indicated in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Related Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Related Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of “Nepal” on the day, month, and year indicated above.

Signed by *[insert authorized signature for the Purchaser]* (for the Purchaser)

Signed by *[insert authorized signature for the Supplier]* (for the Supplier)



Performance Security

[insert complete name and number of Contract]

To: *[insert complete name of Purchaser]*

WHEREAS *[insert complete name of Supplier]* (hereinafter “the Supplier”) has received the notification of award for the execution of *[insert identification number and name of contract]* (hereinafter “the Contract”).

AND WHEREAS it has been stipulated by you in the aforementioned Contract that the Supplier shall furnish you with a security *[insert type of security]* issued by a reputable guarantor for the sum specified therein as security for compliance with the Supplier’s performance obligations in accordance with the Contract.

AND WHEREAS the undersigned *[insert complete name of Guarantor]*, legally domiciled in *[insert complete address of Guarantor]*, (hereinafter the “Guarantor”), have agreed to give the Supplier a security:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of *[insert currency and amount of guarantee in words and figures]* and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract, without cavil or argument, any sum or sums within the limits of *[insert currency and amount of guarantee in words and figures]* as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This security is valid until the *[insert day, month, year]*.

Name: *[insert complete name of person signing the Security]*

In the capacity of: *[insert legal capacity of person signing the Security]*

Signed: *[insert signature of person whose name and capacity are shown above]*

Duly authorized to sign the security for and on behalf of: *[insert seal and complete name of Guarantor]*

Date: *[insert date of signing]*



Advance Payment Security

[insert complete name and number of Contract]

To: *[insert complete name of Purchaser]*

In accordance with the payment provision included in the Contract, in relation to advance payments, *[insert complete name of Supplier]* (hereinafter called “the Supplier”) shall deposit with the Purchaser a security consisting of *[indicate type of security]*, to guarantee its proper and faithful performance of the obligations imposed by said Clause of the Contract, in the amount of *[insert currency and amount of guarantee in words and figures]*.

We, the undersigned *[insert complete name of Guarantor]*, legally domiciled in *[insert full address of Guarantor]* (hereinafter “the Guarantor”), as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the Purchaser on its first demand without whatsoever right of objection on our part and without its first claim to the Supplier, in the amount not exceeding *[insert currency and amount of guarantee in words and figures]*.

This security shall remain valid and in full effect from the date of the advance payment being received by the Supplier under the Contract until *[(insert day, month, year) Contract completion date may be a basis for this date]*.

Name: *[insert complete name of person signing the Security]*

In the capacity of: *[insert legal capacity of person signing the Security]*

Signed: *[insert signature of person whose name and capacity are shown above]*

Duly authorized to sign the security for and on behalf of: *[insert seal and complete name of Guarantor]*

Date: *[insert date of signing]*